MECHANIX ILLUSTRATED

BINDERY
SEP 9 1962

15c
OCTOBER

DEADLY 'SKY SNIPER' ON COMBAT RAID—
IS THIS OUR NEWEST SECRET WEAPON?

CONSTRUCT YOUR OWN CERAMIC KILN

GIVE ENOUGH!

FRANK TINSLEY

State Commander V-8 Starliner "hard-top" White sidewall tires, chrome wheel discs—and glare-reducing tinted glass—optional at extra cost.

Excitingly styled new Studebaker saves gas amazingly

THE JET-STREAMED look of the new Studebaker tips you off to one secret of its gas economy.

The whole car is trim and sleek—free from power-wasting excess weight.

Thanks to this advantage, a Studebaker Champion and Commander V-8 finished first and second in actual gas mileage—ahead of all standard class cars competing in this year's Mobilgas Economy Run.

Like most of the contenders, the Studebakers used Overdrive. It's available at extra cost—and so is Studebaker Automatic Drive. Try out a thrifty Studebaker right away.

1852 ★ Studebaker ★ 1952

One hundred years of progress on the roadways of the world

Sleek "swept-back" lines are a Studebaker style mark. Get a Commander V-8—or a Champion in lowest price field.

at extra cost.
ingly
mark. Get
price field.

A
H

YES

ARE THESE MISTAKES HOLDING YOU BACK?

If you're not getting ahead as fast as you'd like, check these possible reasons. Find out why you're not a success and what you can do about it.

YES NO

☐ ☐ **Do you put things off?** To get anywhere you have to make a start.

☐ ☐ **Do you really want to succeed?** Isn't there something you want enough to work for it? Marriage, a new home, money for your family—all depend on your advancement.

☐ ☐ **Are you unwilling to give up temporary pleasures?** Some people think more of a good time now than of promotion and higher pay later on.

☐ ☐ **Are you too lazy to plan ahead?** You've got to manage your life, plan for success and stick to it.

☐ ☐ **Are you afraid of responsibility?** In a bigger job you'll have to make decisions, act, be somebody.

☐ ☐ **Are you short on courage?** It takes grit and determination to set a course and stick to it.

☐ ☐ **Is your education limited?** The good jobs go to men who *know*—men with sound training in their field. I. C. S. offers you that training.

☐ ☐ **Do you think you can't afford specialized training?** College may be too expensive, but home study lets you earn while you learn, at 1/10 the cost.

☐ ☐ **Do you hesitate to find out where to get training?** If you shy off from taking the first step, you'll never achieve success.

One out of three who read this page and check their shortcomings will *do* something about it. Two will stay in the rut. One will plan for self-improvement and stay with it till he gets there. Are you the one?

I. C. S. has helped train nearly 6 million men and women for better jobs. Among its 391 courses there's one that can help *you* succeed. I. C. S. lessons are clear, direct, authoritative. They give you bedrock facts and theory with practical application. Studying at home you can progress at your own speed, have the advantage of individual instruction. Choose the course you need from the list below, and *mail the coupon today!* We'll send you full information plus free book, "How to Succeed."

INTERNATIONAL CORRESPONDENCE SCHOOLS

ICS

BOX H-2316-B, SCRANTON 9, PENNA.

☐ Please send information about I.C.S. employee training for companies.

Without cost or obligation, please send me the booklet about the course BEFORE which I have marked X:

ART
☐ Commercial Art
☐ Magazine and Book Illustrating
☐ Cartooning
☐ Show Card and Sign Lettering
☐ Fashion Illustrating

AUTOMOTIVE
☐ Automobile, Mechanic
☐ Auto-Elec. Technician
☐ Auto Body Rebuilding and Refinishing
☐ Diesel—Gas Engines

AVIATION
☐ Aeronautical Engineering Jr.
☐ Aircraft Engine Mechanic
☐ Airplane Drafting

BUILDING
☐ Architecture
☐ Arch. Drafting
☐ Building Contractor
☐ Estimating
☐ Carpenter and Mill Work
☐ Carpenter Foreman
☐ Reading Blueprints
☐ House Planning
☐ Plumbing
☐ Heating
☐ Steam Fitting
☐ Air Conditioning
☐ Electrician

BUSINESS
☐ Business Administration
☐ Certified Public Accountant
☐ Accounting
☐ Bookkeeping
☐ Stenography and Typing
☐ Secretarial
☐ Federal Tax
☐ Business Correspondence
☐ Personnel and Labor Relations
☐ Advertising
☐ Retail Business Management
☐ Managing Small Business
☐ Sales Management
☐ Salesmanship
☐ Traffic Management

CHEMISTRY
☐ Chemical Engineering
☐ Chemistry
☐ Analytical Chemistry
☐ Petroleum—Nat'l Gas
☐ Pulp and Paper Making
☐ Plastics

CIVIL, STRUCTURAL ENGINEERING
☐ Civil Engineering
☐ Structural Engineering
☐ Surveying and Mapping
☐ Structural Drafting
☐ Highway Engineering
☐ Reading Blueprints
☐ Concrete Construction
☐ Sanitary Engineering

DRAFTING
☐ Aircraft Drafting
☐ Architectural Drafting
☐ Electrical Drafting
☐ Mechanical Drafting
☐ Structural Drafting
☐ Sheet Metal Drafting
☐ Mine Surveying and Drafting

ELECTRICAL
☐ Electrical Engineering
☐ Electrician
☐ Electrical Maintenance
☐ Electrical Drafting
☐ Electric Power and Light
☐ Lineman

HIGH SCHOOL
☐ High School Subjects
☐ College Preparatory
☐ Mathematics
☐ Commercial
☐ Good English

MECHANICAL AND SHOP
☐ Mechanical Engineering
☐ Industrial Engineering
☐ Industrial Supervision
☐ Foremanship
☐ Mechanical Drafting
☐ Machine Design-Drafting
☐ Machine Shop Practice
☐ Tool Design
☐ Industrial Instrumentation
☐ Machine Shop Inspection
☐ Reading Blueprints
☐ Toolmaking
☐ Gas—Electric Welding
☐ Heat Treatment—Metallurgy
☐ Sheet Metal Work
☐ Sheet Metal Pattern Drafting
☐ Refrigeration

POWER
☐ Combustion Engineering
☐ Diesel—Electric
☐ Electric Light and Power
☐ Stationary Steam Engineering
☐ Stationary Fireman

RADIO, TELEVISION, COMMUNICATIONS
☐ General Radio
☐ Radio Operation
☐ Radio Servicing—FM
☐ Television
☐ Electronics
☐ Telephone Work

RAILROAD
☐ Locomotive Engineer
☐ Diesel Locomotive
☐ Air Brakes ☐ Car Inspector
☐ Railroad Administration

TEXTILE
☐ Textile Engineering
☐ Cotton Manufacture
☐ Rayon Manufacture
☐ Woolen Manufacture
☐ Loom Fixing
☐ Finishing and Dyeing
☐ Textile Designing

HOME ARTS
☐ Dressmaking and Designing
☐ Cookery
☐ Tea Room Management

Name _____ Age _____ Home Address _____

City _____ State _____ Working Hours _____ A.M. to _____ P.M.

Occupation _____

Special tuition rates to members of the Armed Forces. Canadian residents send coupon to International Correspondence Schools Canadian, Ltd., Montreal, Canada.

DO PUBLIC LIBRARY CED 1952
CHNOLOGY DEPARTMENT

MECHANIX ILLUSTRATED

SPECIAL FEATURES

Opportunity C.O.D. . . . . Lester David 55
Sky Sniper—Newest Secret Weapon? . . . Frank Tinsley 64
The Farmer Takes A Plane . . . . . Chester Whitehorn 70
Six-Shop Smiley Burnette . . . . . S. Nolyn 74
On The Trail Of The Rail . . . . . Raymond R. Camp 90
You Ain't Seen Nothin' Yet . . . . . Henry M. Lewis, Jr. 94

TOM McCAHILL TESTS

The '52 Hudson Hornet 80
The Sunbeam-Talbot 84

REGULAR FEATURES

New In Science 59, 68
Prize Gadget: Razor-Blade Letter Opener 61
MMI: I Turn Worms Into Dollars . . . . . F. H. Hammond 76
New For The Home 79
Pin-Up Car 88
New For The Road 89
New For The Sportsman 93
HHF: Joshua Lionel Cowen 98

SHORT FEATURES

Rolling Home 60
World's Steepest Railway 62
Artist In Hardware 63
Giant Vacuum Sweeper 63

DEPARTMENTS

Editor's Workbench 12
Invention Clinic 20
Dear Editor 24

(Continued on page 6)

MI
OCTOBER 1952

W. H. FAWCETT, JR. president
ROGER FAWCETT general manager
RALPH DAIGH editorial director
AL ALLARD art director
LEE WILSON production director
JACK BRYNER advertising manager

WILLIAM L. PARKER editor

feature staff
GILBERT PAUST feature editor
ARTHUR UNGER news editor

crafts & hobbies staff
ROBERT BRIGHTMAN crafts & hobbies editor
JOHN G. KINGDON boating editor
ROBERT LASSON associate editor
LARRY EISINGER advisory editor

art staff
FRANK A. TAGGART art editor
AL HEIGHINGTON art associate
HENRY E. BIRD art associate

HELEN E. SLOWIN production editor

VOLUME 47 NUMBER 6
A FAWCETT PUBLICATION
COPYRIGHT 1952 BY FAWCETT PUBLICATIONS, INC.
TITLE REGISTERED U. S. PATENT OFFICE

COVER: PAINTING BY FRANK TINSLEY

MECHANIX ILLUSTRATED is published monthly by Fawcett Publications, Inc., Fawcett Building, Fawcett Place, Greenwich, Conn. Printed in U.S.A. Editorial offices: 67 W. 44th St., New York 36, N. Y. Advertising offices: New York 36, 67 W. 44th St., Detroit 26, 1659 Guardian Building; Chicago 11, 612 N. Michigan Ave.; Los Angeles 17, 643 S. Flower St.; San Francisco 4, 111 Sutter St. General Offices, Fawcett Building, Fawcett Place, Greenwich, Conn. Shepard Spink, Advertising Director; Roscoe K. Fawcett, Circulation Director; Gordon Fawcett, Treasurer; Allan M. Adams, Secretary; Al Allard, Art Director. Entered as second-class matter at the post office at Greenwich, Conn., under the act of March 3, 1879. Additional entry at Louisville, Ky. Copyright 1952 by Fawcett Publications, Inc. Reprinting in whole or in part forbidden except by permission of the publishers. Title registered in the U. S. Patent Office. Address manuscripts to MECHANIX ILLUSTRATED, 67 West 44th St., New York 36, N. Y. All remittances and correspondence concerning subscriptions as well as notification of change of address should be addressed to Circulation Department, Fawcett Building, Fawcett Place, Greenwich, Conn. Not responsible for lost manuscripts or photos. Unacceptable contributions will be returned, if accompanied by sufficient first class postage. Price 15c a copy. Subscriptions $1.80 per year in the United States and Possessions. 20c per copy in Canada and other foreign countries and in certain specified geographical areas of the U. S., subscriptions $2.40 per year in Canada and Pan America. Other foreign countries $3.15 per year. Foreign subscriptions and sales should be remitted by International money order in U. S. Funds payable at Greenwich, Conn. Advertising forms close fifth of second month preceding date of issue.

MEMBER AUDIT BUREAU OF CIRCULATIONS

es editor

r

ONS, INC.

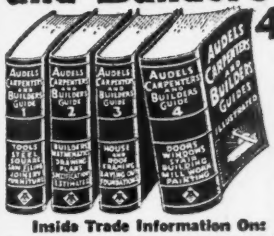
Y

by Fawcett
ace, Green-
67 W. 44th
w York 36,
ilding; Chi-
17, 643 S.
t. General
wich, Conn.
K. Fawcett,
; Allan M.
Entered as
ich, Conn.,
ry at Louis-
tions, Inc.
by permis-
. S. Patent
USTRATED,
Monces and
l as notifi-
d to Circu-
ace, Green-
s or photos.
f accompa-
5c a copy.
States and
her foreign
al areas of
anada and
per year.
mitted by
payable at
of second

CULATIONS

A
a

AUDELS Carpenters and Builders Guides



4 vols. $6

Inside Trade Information for Carpenters, Builders, Joiners, Building Mechanics and all Woodworkers. These Guides give you the short-cut instructions that you want—including new methods, ideas, solutions, plans, systems and money saving suggestions. An easy progressive course for the apprentice and student. A practical daily helper and Quick Reference for the master worker. Carpenters everywhere are using these Guides as a Helping Hand to Easier Work, Better Work and Better Pay. To get this assistance for yourself, simply fill in and mail the FREE COUPON below.

Inside Trade Information On:

How to use the steel square—How to file and set saws—How to build furniture—How to use a miter box—How to use the chalk line—How to use rules and scales—How to make joints—Carpenters arithmetic—Solving mensuration problems—Estimating strength of timbers—How to set girders and sills—How to frame houses and roofs—How to estimate costs—How to build houses, barns, garages, bungalows, etc.—How to read and draw plans—Drawing up specifications—How to excavate—How to use settings 12, 13 and 17 on the steel square—How to build hoists and scaffolds—skylights—How to build stairs—How to put on interior trim—How to hang doors—How to lath—lay floors—How to paint

AUDEL, Publishers, 49 W. 23rd St., New York 10, N. Y.

Mail Audels Carpenters and Builders Guides, 4 vols., on 7 days free trial. If OK, I will remit $1 in 7 days and $1 monthly until $6 is paid. Otherwise I will return them. No obligation unless I am satisfied.

Name_____

Address_____

Occupation_____

Employed by_____ M10

ENGINEERS LIBRARY

Highly Endorsed

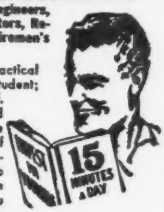
FOR ALL OPERATING ENGINEERS

3500 PAGES • 5000 ILLUSTRATIONS

$9 COMPLETE • PAYABLE $1 A MONTH

For all Stationary, Steam, Diesel and Hoisting Engineers, Firemen, Water Tenders, Oilers, Boiler Operators, Repair Men and Applicants for Engineer's and Firemen's License Examinations.

THIS MASTER SET is a Gold Mine of Daily, Practical Help. A Self-Educating Study Course for the student; or a standard reference work for the chief. Thousands of rules, tables, calculations and diagrams make it easy to read and learn. Late inside information on theory and practice of modern engineering for reference study and review. Thousands of short-cuts that make the job easier. Examine free! Pay $1. a month (less than 4c. a day) if satisfied that this set will help you to a better job—or make your present job easier.



WHAT ALL AUTO MECHANICS WANT TO KNOW

1800 PAGES

This Big Practical Book gives full information with working diagrams covering the principles, construction, ignition, service and repair of modern cars, trucks and buses.

Diesel Engines, Hydramatic & Fluid Drives Fully Explained.

A complete Guide of 1800 pages, with over 1500 illustrations showing inside views of working parts, with instructions for service jobs.

IT PAYS TO KNOW

How to fit pistons—How to locate engine knocks, How to fit connecting rod bearings—How to service main bearings—How to recondition valves—How to time valves—How to adjust fan belts—How to adjust carburetors and chokes, How to rebuild a clutch—How to service automatic transmissions—How to service brakes—How to adjust steering gear—How to cope with ignition troubles—How to service distributors—How to time ignition—How to "tune up" an engine.

$4 COMPLETE • PAY $1 A MO.

TO GET THIS ASSISTANCE FOR YOURSELF SIMPLY FILL IN AND MAIL COUPON TODAY.

Step up your own skill with the facts and figures of your trade. Audels Mechanics Guides contain Practical Inside Trade Information in a Handy Form. Fully illustrated and Easy to Understand. Highly Endorsed. Check the book you want for 7 DAYS FREE EXAMINATION. Send No Money. Nothing to pay postman.

MAIL ORDER

AUDEL, Publishers, 49 W. 23 St., NEW YORK 10, N. Y.

Please send me postpaid for FREE EXAMINATION books marked (x) below. If I decide to keep them I agree to mail $1 in 7 Days on each book or set ordered and further mail $1 monthly on each book or set until I have paid price, otherwise I will return them.

Check NOW!

You Can Look Over Any Guide In Your Own Home

—

Start the Easy Payments If Satisfied

MAIL THIS TODAY

- ☐ AUTOMOBILE MECHANICS GUIDE, 1800 Pages $ 4
- ☐ TRUCK & TRACTOR GUIDE, 1299 Pages . . . 4
- ☐ DIESEL ENGINE MANUAL, 575 Pages 2
- ☐ MACHINISTS HANDY BOOK, 1650 Pages . . . 4
- ☐ WELDERS GUIDE, 400 Pages 1
- ☐ BLUE PRINT READING, 416 Pages 2
- ☐ MATHEMATICS & CALCULATIONS, 700 Pages. 2
- ☐ SHEET METAL PATTERN LAYOUTS, 1100 Pages 4
- ☐ SHEET METAL WORKERS HANDY BOOK, 388 Pgs. 1
- ☐ MECHANICAL DRAWING GUIDE, 160 Pages . . 1
- ☐ MECHANICAL DRAWING & DESIGN, 480 Pages 2
- ☐ AIRCRAFT WORKER, 240 Pages 1
- ☐ TELEVISION SERVICE MANUAL, 384 Pages . . 2
- ☐ RADIOMANS GUIDE, 914 Pages 4
- ☐ ELECTRONIC DEVICES, 216 Pages 2
- ☐ ELECTRIC MOTOR GUIDE, 1000 Pages 4
- ☐ ELECTRIC WIRING DIAGRAMS, 272 Pages . . 1
- ☐ ELECTRICIANS EXAMINATIONS, 250 Pages. . 1
- ☐ ELECTRIC POWER CALCULATIONS, 425 Pages. 2
- ☐ HANDY BOOK OF ELECTRICITY, 1440 Pages. . 4
- ☐ ELECTRIC DICTIONARY, 9000 Terms 2
- ☐ ELECTRIC LIBRARY, 7000 Pages (12 Book Set) 18
- ☐ MARINE ENGINEERS HANDY BOOK, 1258 Pgs. 4
- ☐ SHIPFITTERS HANDY BOOK, 250 Pages . . . 1
- ☐ REFRIGERATION & Air Conditioning, 1280 Pgs. 4
- ☐ MILLWRIGHTS & MECHANICS GUIDE, 1200 Pgs. 4
- ☐ POWER PLANT ENGINEERS GUIDE, 1500 Pages 4
- ☐ ENGINEERS & FIREMANS EXAMS, 525 Pages . 1
- ☐ PUMPS, Hydraulics & Air Compressors, 1658 Pgs. 4
- ☐ ENGINEERS LIBRARY (3 Book Set) 9
- ☐ MECHANICAL DICTIONARY, 950 Pages 4
- ☐ GARDENERS & GROWERS GUIDES (4 Book Set) 6
- ☐ CARPENTERS & BUILDERS GUIDES (4 Book Set) 6
- ☐ PLUMBERS & Steamfitters Guides (4 Book Set) 6
- ☐ MASONS AND BUILDERS GUIDES (4 Book Set) 6
- ☐ PAINTERS & DECORATORS MANUAL, 450 Pgs. 2
- ☐ HOUSE HEATING GUIDE, 1000 Pages 4
- ☐ OIL BURNER GUIDE, 384 Pages 1

Name_____

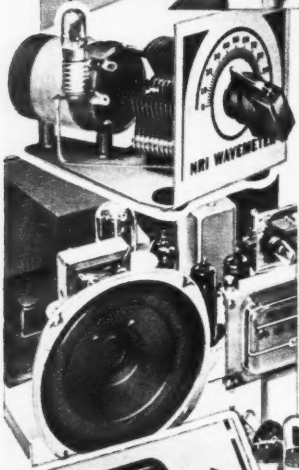
Address_____

Occupation_____

Employed by_____ M10

J. E. SMITH, President, National Radio Institute, Washington, D. C., has trained more men for Radio-Television than any other man. Established 1914

I'll Train You RADIO-



Practice SERVICING or COMMUNICATIONS with Kits I Send

As part of either my Communications Course or my Servicing Course I send you many kits of parts that give you PRACTICAL EXPERIENCE. They "bring to life" the principles in my easy-to-understand, illustrated lessons. Shown at left is some of the equipment you build. Build valuable Multitester, use it to make many tests, earn extra money in spare time fixing neighbors' Radios. Build many circuits common to both Radio and Television. All equipment is yours to keep. Mail coupon for my FREE DOUBLE OFFER! My free 64-page book describes and pictures equipment I send.

Television Is Today's Good Job Maker

In 1951 over 15,000,000 homes had Television sets, more are being sold every day. Television now reaches from coast to coast. 108 TV stations are already operating, over 1800 more have been authorized. This means new jobs, more jobs, better pay for trained men. The time to act is NOW! Start learning Radio-Television servicing or communications.

Make Extra Money in Spare Time While Learning

Keep your job while training. Many NRI students make $5, $10 and more a week extra fixing neighbors' Radios in spare time. I start sending you special booklets that show you how to service sets the day you enroll. Multitester you build helps discover and correct Radio troubles, gives PRACTICAL EXPERIENCE on circuits common to Radio and TV.

I Trained these Men at Home

Laborer Finds Success in Radio-TV

I was a laborer with no future. Now I have a position that pays well. My spare time servicing pays good money, too. Thanks to NRI."—Robert Ford, Johnstown, Pa.

Switched to TV Servicing

"I recently switched from studio work and am now holding a position as TV service technician. Enjoy my work more and more." — Norman Ward, Ridgefield Park, N. J.

Paid for Course, Car in Spare Time

"By the time I graduated I had paid for my course, a car and testing equipment. I can handle any job in Radio-TV."—E. J. Streitenberger, New Boston, Ohio.

$10 to $15 Week Spare Time

"Four months after enrolling, was able to service Radios . . . averaged $10 to $15 a week spare time. Now have full time business." — W. Weyde, Brooklyn, N. Y.

Employed as Transmitter Operator

"A former employer recommended NRI training to me. Now employed as transmitter operator in Harrisburg."—Albert Herr, New Cumberland, Penna.

AT HOME for Good Jobs in TELEVISION

There is Success-Good Pay-Security for You in America's Fast Growing Industry

NRI Training Leads to These Jobs in RADIO-TELEVISION

BROADCASTING
Chief Technician
Chief Operator
Power Monitor
Recording Operator

SERVICING
Home and Auto Radios
Television Receivers
P.A. Systems

MANUFACTURING
Design Technician
Service Manager
Tester
Research Assistant

SHIP AND HARBOR RADIO
Chief Operator
Radiotelephone Operator
Assistant Operator

GOVERNMENT RADIO
Operator in Army, Navy, Marine Corps
Airways Operator
Forestry Dispatcher

AVIATION RADIO
Transmitter Technician
Airport Transmitter Operator

TELEVISION
Pick-up Operator
Television Technician
Remote Control Operator
Service and Maintenance Technician

POLICE RADIO
Transmitter Operator
Receiver Serviceman

Control Operator, Station WEAN

"Received my License and worked on ships. Now with Station WEAN. NRI Course is as complete as any radio course can be." —Raymond E. Arnold, Rumford, R. I.

Lost Job, Now Has Own Shop

"Got laid off my machine shop job which was best thing that ever happened to me as I opened a full time RADIO shop." —Ernest T. Slate, Corsicana, Texas.

DO YOU want good pay, a job with a bright future, security? Would you like to have a profitable business of your own? If so, find out how you can realize your ambition in the fast-growing RADIO-TELEVISION industry. Even without Television, the industry is bigger than ever before. 105 million home and auto radios, 2900 Radio Broadcasting Stations, 108 TV Stations with 1800 more now authorized. Expanding use of Aviation and Police Radio, Micro-Wave Relay, Two Way Radio for buses, taxis, etc., are making opportunities for Servicing and Communications technicians and FCC Licensed Operators.

My Training Includes Television

You get practical experience by working on circuits common to both Radio and Television. My graduates are filling jobs, making good money in both Radio and Television. Many NRI trained men start their own Radio and Television servicing business with capital earned in spare time. Let me show you how you can be your own boss; earn $5, $10 a week extra even while still learning. Now is the time to get ready for success in TV. Mail coupon now.

Find Out What Radio-Television Offers You

What will YOU be doing one year from today? Decide now that you are going to know more and earn more. ACT NOW. Send the coupon below NOW for my FREE DOUBLE OFFER. You get Actual Servicing Lesson. Also my 64-page Book, "How to Be a Success in Radio-Television." Read what my graduates are doing, earning, see equipment you practice with at home. Mail coupon now. Send in envelope or paste on postal. J. E. SMITH, President, Dept. 2KC, National Radio Institute, Washington 9, D. C. Our 39th year.

Actual Lesson and 64-page Book BOTH FREE

MAIL THIS NOW!

Mr. J. E. Smith, President, Dept. 2KC,
National Radio Institute, Washington 9, D. C.

Mail me Sample Lesson and 64-page Book, "How to Be a Success in Radio-Television." (No salesman will call. Please write plainly.)

Name.....Age.....

Address.....

City.....Zone.....State.....

TURN RIGHT

Get on the Road to a Better Job ... Brighter Future with RIGHT Training

AMERICAN SCHOOL
Dept. G728, Drexel at 58th, Chicago 37, Ill.

Without obligation, please send me FREE and postpaid, full particulars about the subject checked below.

- ☐ Accounting
- ☐ Air Conditioning
- ☐ Architecture & Building
- ☐ Automotive Technician
- ☐ Better Foremanship
- ☐ Bookkeeping
- ☐ Business Management
- ☐ Contracting
- ☐ Diesel Technician
- ☐ Drafting—Building Trades
- ☐ Drafting—Machine Trades
- ☐ Electrical Engineering
- ☐ Electricity—Practical
- ☐ Electronics—Industrial
- ☐ High School Courses
- ☐ Machine Shop Operations
- ☐ Mathematics & Slide Rule
- ☐ Mechanical Engineering
- ☐ Plastics Engineering
- ☐ Plumbing—Practical
- ☐ Private Secretary
- ☐ Refrigeration
- ☐ Retail Merchandising
- ☐ Salesmanship—Outside
- ☐ Sheet Metal Work
- ☐ Tool Making

NAME ..... OCCUPATION .....

HOME ADDRESS ..... AGE .....

CITY ..... STATE .....

START NOW by checking, filling in and mailing this coupon. You'll get full information... No cost, No obligation!

● **Today,** choose the career you want and take the first easy step toward your goal. Learn how you can get the training that can put you in the bigger pay class. Find out how, in spare time at home, you can qualify for work you prefer, promotions and bigger pay checks. Or if you are already in the work you like, find out how you can climb faster.

Backed by 55 Years of Training Know-How

Since 1897 American School has helped many thousands toward success by providing specialized training for commercial and technical advancement. Its program for you has been prepared by experts in the subject you select and the school will help you every step of the way. In time you might otherwise waste you can prepare at home and really GO on the right road.

Don't Delay YOUR Start

Give serious thought to the list of training courses listed above. Pick the opportunity that interests you, check it and add your name and address. (Check more than one if you are undecided which appeals most.) Then clip and mail the coupon. Full information will be supplied without cost or obligation.

THE SOONER YOU START, THE SOONER YOUR GOAL CAN BE REACHED

MI

CRAFTS AND HOBBIES

continued from page 2

Oak Coffee Table 101
MI's Vacation Home (Part 2) 102
Around The House 108
Prepare Before You Paint 110
Workbench Award Winners 114
Make A Ceramic Kiln 116
Craftsman's Corner 120
Car Care—Cooling System 122
New For The Shop 125
Roundhouse—Display Shed 126
New Products For Your House 128
Farm Kinks 129
Save That Chair 130
Trailer Trike 133
Custom-Crafted Jewelry 134
Hammer-And-Saw Workbench 136
Model Ricksha 139
Operating An Outboard 140
Monthly Photo Contest 144
Cut Film Adapter 145
Photo Handies 146
Telescope—Pipe Fittings 'Scope .. 152

LEARN

ELECTRICITY AND ELECTRONICS

ON REAL EQUIPMENT

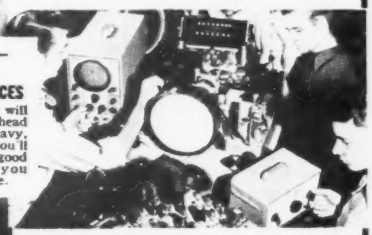
IN THE GREAT SHOPS OF COYNE

HIGHER RANK—HIGHER PAY—IN ARMED FORCES

Coyne Training will help you forge ahead in the Army, Navy, Air Force. And you'll be all set for a good future when you leave the service.

RADIO-TELEVISION

Plays a Vital Roll in Nation's Defense



The tremendous growth of this new field is almost unbelievable. TV has been given the "go-ahead" in 1227 new communities, with 1845 new stations to be built. Unusual opportunity to get in on ground floor. RADIO—TELEVISION and ELECTRONICS are vital to our Defense Program. And they offer a world of opportunities for a real future when the emergency is over. **Train quickly** on actual equipment **at Coyne** by practical-technical methods. Get big Free Book today.

ELECTRICITY—

The Power Behind Our Defense Program

A great opportunity field and vital to Defense. Thousands of trained Electrical and Electronics men needed in good jobs with a real future when the emergency is over. Why be satisfied with a "no future" job? Get Free Book that tells how thousands have prepared quickly for Electricity and Electronics at Coyne.

TRAIN QUICKLY AT COYNE FOR VITAL FIELDS

ELECTRICITY–RADIO-TELEVISION–ELECTRONICS–VITAL in Industry and Armed Forces. TRAIN QUICKLY for better rating, if drafted—vital job in Industry, if not. Trained men whether 16 or up to 50 needed. Many men with physical handicaps can qualify. Prepare now for steady, well paid, essential jobs in A FIELD THAT ALSO OFFERS A REAL FUTURE WHEN THE EMERGENCY IS OVER.

WE TRAIN YOU IN CHICAGO

We do not teach by mail. All training is given in our Great Training Shops in Chicago, plus necessary theory. No advanced education or previous experience needed.

APPROVED FOR VETERANS—FINANCE PLAN FOR NON-VETS

Non-vets enroll now, pay most of tuition after graduation. If you need part-time work to help out with living expenses while **at Coyne,** we'll help you get it. Special plan for men of Draft Age.

1 You are TOLD the how and why of each job.

2 You're shown how to do typical jobs by trained instructors.

3 You DO practical job YOURSELF on equipment.

Mail Coupon for Big FREE BOOK

Whether you prefer Electricity or Television-Radio, train on actual equipment, at Coyne. Fill in and mail coupon TODAY. Paste it on a postcard if you wish. A big fully illustrated booklet and complete details will come by return mail. No salesman will call.

B. W. COOKE, President

COYNE SCHOOL A TECHNICAL TRADE INSTITUTE CHARTERED NOT FOR PROFIT Established 1899 500 S. Paulina, Dept. 72-53H Chicago 12, Illinois

ELECTRICITY ★ TELEVISION ★ RADIO ★ REFRIGERATION ★ ELECTRONICS

B. W. COOKE, President
COYNE SCHOOL
500 S. Paulina St., Chicago 12
Dept. 72-53H

Send your BIG FREE BOOK and details of your training offer. This does not obligate me and no salesman will call. I am interested in

☐ ELECTRICITY ☐ TELEVISION-RADIO

NAME.....

ADDRESS.....

CITY.....STATE.....

Want to make more money?
Be more popular with people?
Live a happier, fuller life?

GET THE KEY TO SELF-ADVANCEMENT

How SUCCESS is within Your Reach!

The Key to Self-Advancement can help you get ahead, have more confidence.

The key to Self-Advancement can help you get along with people, make friends.

The Key to Self-Advancement can help you get job security and greater happiness.

Why are some people more confident, more assured than others? Why do they seem to live a happier, fuller life? Why do certain of your fellow workers seem to "get the breaks"...get ahead with *less ability* than you?
THE ANSWER IS SIMPLE: *The successful, happy, popular people possess the Key to Self-Advancement.*

THINK WHAT THE KEY TO SELF-ADVANCEMENT CAN MEAN TO YOU!

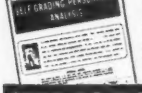
If you've been plodding along, year after year, at the same old job, the Key to Self-Advancement can mean more job security, more money, a more complete use of your abilities. If you're shy and timid, it will bring you out of your shell, make you more popular. If you feel discouraged, down on your luck, the Key to Self-Advancement can mean a satisfying new life for you.

YOU LEARN AT HOME IN YOUR SPARE TIME!

We have trained thousands of men who not only have made a success in business and industry, but also have made a success in living. It is from this experience that this practical, sensible, down-to-earth course in human relations has been built!
You start *immediately* to apply the lessons in your everyday life—at home and at work! You can see the change yourself — in a short time — and begin to get the things you've always wanted. Mail the coupon below *now—today!*

ACT NOW—DON'T DELAY!

We will send you — at once — complete information about how you can master the Key to Self-Advancement *right at home*—how you can get a new start toward true happiness and real satisfying success. In addition, *if you act now,* I will give you absolutely FREE — a fascinating Self-Grading Personality Chart. Fill out coupon below at once.



SEND NO MONEY! MAIL COUPON NOW!

ROSENKRANZ SELF-ADVANCEMENT INSTITUTE
456 W. Santa Barbara, Dept. KB-102
Los Angeles 37, California
Mail in envelope or paste on postal card

Without obligation send me FREE the valuable Self-Grading Personality Chart, plus complete information about how I can master the Key to Self-Advancement at home. I understand no salesman will call.

NAME _____ AGE _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

WITH AMAZING, FULLY GUARANTEED
TISSU-PAK
OIL FILTER

Keeps engine oil sparkling clean. Eliminates expensive oil changes and costly element replacements. Inexpensive to buy. *Easy to install* on all gasoline engines up to 14 quarts crankcase capacity—automobiles, trucks, tractors, stationary and marine engines.

Enthusiastic testimonial from thousands of individual and fleet users.

Write today for FREE "Tissu-Pak Facts." Mailed immediately.

HENDERIZE, INC. • 5667-D2 FREEPORT BLVD. SACRAMENTO, CALIF.

MONEY for MEN ALL DATA **FREE**

THE PLASTEX Industry needs manufacturers on small scale and for big production of Lamp and Clock Stands, Art Goods and Novelties in Plastex and Marble imitation. Experience unnecessary. ½c material makes regular 10c store sellers. Rubber molds furnished for speed production. Small investment brings good returns. We are now placing big chain store orders with manufacturers. Ambitious men have chance for real prosperity. Our free booklet will interest and benefit you.

PLASTEX INDUSTRIES, DEPT. 3
3400 THIRD AVE., NEW YORK 56, N. Y.

MASTER MIND!

Learn Short-Cut Mathematics

Juggle figures, do baffling number tricks. Make people gasp at your marvelous *lightning*-quick mind. Multiply 4 figures by 4 figures without using old-fashioned multiplication! Big cloth-bound volume; fully illustrated course.

Sharpen up Your Brain Power

Includes worked-out problems, answers, etc. Sensational bargain, only $1.95, postpaid or COD plus postage. Satisfaction guaranteed or refund. Order this amazing "Short-Cut Mathematics" today!

NELSON-HALL CO., 210 S Clinton St. Chicago 6, Ill. Dept. 3KY-3

$1.95 Complete

WAR SURPLUS BARGAINS

$500,000.00 INVENTORY for QUICK LIQUIDATION

Surplus items—hundreds of them for home, shop, factory, farm and outdoors use. New items, used items, reconditioned items—all at tremendous savings—all priced for quick sale.

Page After Page of Values

This big catalog shows page after page of amazing money saving values. Write for your copy today. Send 10c to cover postage, mailing, etc. Write today!

SEND TODAY FOR YOUR COPY **10c**

STARK'S Dept. MI-10 509 So. STATE STREET CHICAGO 5, ILLINOIS

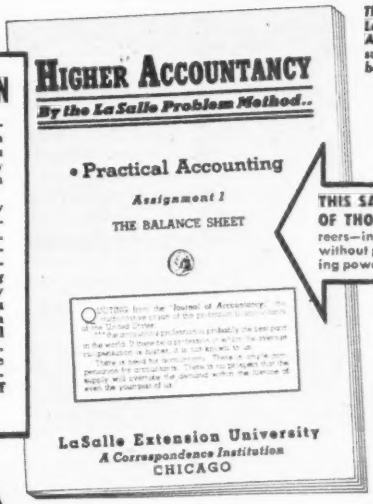
This *FREE SAMPLE LESSON* will prove you can become an expert BOOKKEEPER . . . ACCOUNTANT OR C.P.A.

This well-paid LaSalle-trained Accountant's success could be yours.

FREE SAMPLE LESSON

We offer you this free sample lesson so that you can *prove to yourself* that you CAN master Accountancy —quickly, thoroughly—in spare time at home.

You will see exactly how LaSalle's famous "Problem Method" works . . . how you are led step-by-step through actual accounting work—*learning by doing* and not by study of theory alone. First you tackle easy problems, then more difficult ones—until soon you master them all. And at every step you have the close personal guidance of LaSalle's large staff of C.P.A. instructors.



THIS SAME LESSON HAS STARTED HUNDREDS OF THOUSANDS toward well-paid accounting careers—in business, government, and as C.P.A.'s. Even without previous knowledge, progress is rapid—earning power climbs fast. This sample lesson shows why.

Nearly 10% of all C.P.A.'s in the U.S. have been trained by the LaSalle Problem Method

IF you have been envying the high incomes and good jobs enjoyed by thousands of men and women Accountants today... incomes ranging from $4,000 to $10,000 and more per year... why not launch such a career for yourself?

Do you doubt that you can?

Then let us send you—without cost or obligation—the same Lesson Number One with which LaSalle has started several hundred thousand men and women toward successful accounting careers. We want you to see for yourself how this remarkable method, originated by LaSalle, makes Accountancy simple, interesting, practical, and certain . . . how it leads you step-by-step to a complete mastery of Accounting—and on up to the coveted degree of Certified Public Accountant if you so aspire.

It doesn't matter whether you've had previous bookkeeping experience, or whether you don't know a debit from a credit. Whether you wish to qualify as an expert bookkeeper, advanced accountant, cost accountant, auditor, government accountant, income tax specialist, or public accountant... you'll find in LaSalle's Problem Method the exact plan to prepare you rapidly and inexpensively—in spare hours at home—without losing a day from your present job.

So right now, today... if you are an adult, employed, and earnestly ambitious for rapid advancement in this highest-paying of all professions... send your name and address on the coupon below. We'll send the free sample lesson—plus our 48-page book outlining today's career opportunities and how you can qualify for them. A coupon like this has started many thousands toward greater success. It can do the same for you. Mail it today!

GOOD-PAY JOBS IN 5 BIG FIELDS

If you were an expert accountant right now, chances are you would find yourself among the highest-paid of all professional men and women. Surveys show that accountants earn more than those in other major professions.

There are five big fields of opportunity open to Accountancy-trained men and women . . . opportunities that are wide open and highly inviting, offering maximum income and job security in good times or bad. And under LaSalle's "Problem Method" you can start earning while still learning—either in spare-time or full-time employment . . . or in business for yourself with no capital required.

Get the latest information by sending for our 48-page book, "Accountancy, the Profession That Pays"... plus free sample lesson. The coupon at right will bring both to you without cost or obligation. LaSalle Extension, 417 S. Dearborn St., Chicago 5, Ill.

Clip Coupon . . . Mail TODAY!

LaSalle Extension University . . . *A Correspondence Institution*

Dept. 10493H, 417 S. Dearborn Street, Chicago 5, Illinois

YES, I want to see how LaSalle's "Problem Method" works.. how I can qualify for high-pay Accountancy positions. Send Free Sample Lesson—also your 48-page book. "Accountancy, the Profession That Pays" ...all without cost or obligation.

Name..... *Age*.....

Street Address.....

City, Zone & State.....

Present Position.....

FOR A BETTER "INSIDE JOB" USE PYROIL

You may spend time and money in keeping your car polished, gleaming and color-bright on the outside. But what about the inside—the expensive "heart" of your car—the motor? Are you sure that's giving you the best performance at the lowest maintenance cost? One way to be absolutely sure is to use Pyroil. Pyroil won't take any of your time or effort—and costs just a few pennies. Pyroil improves lubrication. Pyroil prevents friction between cylinder surfaces and piston rings. Pyroil prevents clogging, caused by carbon deposits and rust. Pyroil cleans your motor, and keeps it clean.

For a better "inside job," add Pyroil—add miles to your car.

Pyroil for Aircraft Engines

Use Aircraft Pyroil B for lubricating oil, Aircraft Pyroil A for gasoline.

GIVEN! An attractive Pyroil metal savings bank—takes coins up to 50c pieces. MOTOR-18T8. It's yours for the asking—sent postage paid.

Manufactured and Guaranteed by Pyroil Company, 165 Pyroil Bldg., La Crosse, Wisconsin.

Canadian Distributors: Central Purchasing Agencies, Ltd., Toronto, Ontario

PYROIL COMPANY
165 Pyroil Bldg., La Crosse, Wisconsin

I want my car to last and run properly. Please tell me more about Pyroil and how it can accomplish this for me.

Name .....

Address .....

City or Town..... State. .....

CAR BURNING OIL? LOST ITS PEP?

Use Genuine Holt's PISTON SEAL

Cut Oil Cost! Restore Compression! Stop Piston Slap! Save on Gas!

Absolutely guaranteed. Used throughout the world. Over 500,000 satisfied users. Guaranteed safe and effective. One tube treats most cars. Send $4.95 to R. H. Philbrick, 220-4 Miracle Mile, Coral Gables, Florida. Postpaid.

TREASURE! URANIUM!

GEIGER COUNTERS—METAL DETECTORS GEIGER COUNTERS for Uranium. METAL DETECTORS for gold, silver and buried treasure. 5 models from which to choose. We have one in your price range. No finer instruments available anywhere. FREE ILLUSTRATED FOLDERS.

THE Detectron CO. Model DG-7
5631 CAHUENGA, NO. HOLLYWOOD, CALIF.

Success-Winning VOICE!

Sound like the HE-MAN you are . . .

STRENGTHEN your voice this tested scientific way. Yes—you may now be able to improve the POWER of your speaking and singing voice . . . in the privacy of your own room! Self-training lessons, mostly silent. No music required.

FREE BOOK Write TODAY for Eugene Feuchtinger's great booklet "How to Develop a Successful Voice." It's absolutely FREE! You must state your age. Booklet mailed postpaid in plain wrapper. No salesman will call. Send your name and age RIGHT NOW! **Prefect Voice Institute, 210 S. Clinton St., Studio KY-3, Chicago 6, Ill.**

OWN Your Own Business

$5 per hour

Clean and Mothproof rugs and upholstery "in the home" or public buildings. If now employed, you can operate in spare time and build up a permanent profitable full-time business. Alert dealers can average $5 hourly gross profit on service they render and $3 on EACH of their servicemen at National Price Guide charges. Easy to learn . . quickly established.

DURACLEAN cleans by absorption! No scrubbing, soaking or shrinkage. Dirt and grease vanish . . matted pile rises . . colors revive. Furnishings used again same day.

DURAPROOF resists moths and carpet beetles. Your service backed by a National Money Back 4 Year Warranty.

We furnish enough material to return your total investment in War-proof Business. EASY TERMS. Send for **FREE** booklet TODAY.

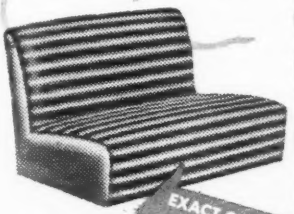
DURACLEAN CO., 2-170 DURACLEAN BLDG., DEERFIELD, ILL.

Save UP TO 50%

WITH THIS SENSATIONAL

AUTO SEAT COVER

Bargain!



EXACT COPY OF $50 PATTERN!

New

Candy Stripe

AUTO SEAT COVERS

FITS ALL CARS

$2.95 FRONT ONLY

FRONT & REAR $5

Now, at last, you can have the smartest seat covers to protect your upholstery and add distinction to your car at sensational low cost. Tailored of miracle plastic in luxurious **candy stripe design.** Choice of 4 rich looking color combinations . . red, gray, blue, or green. New snap on action holds them tight. **FITS ALL CARS.** Colorfast! Can't fade or shrink. Waterproof, stainproof, greaseproof. Resists burns. Cleans easily with a damp cloth.

Give year and make of car, 2-door, 4-door or coupe.

SEND NO MONEY

TRY IN YOUR CAR AT OUR RISK!

MAIL THIS COUPON NOW!

YOUNG PRODUCTS
DEPT. 593
2603 ELMHURST, DETROIT 6, MICH.

Please rush Seat Covers as follows:
☐ 2-Dr. ☐ 4-Dr. ☐ Coupe ☐ RED ☐ GREEN
Make of car..... ☐ BLUE ☐ GRAY
☐ Front Only $2.95 ☐ Front & Rear $5

If I am not delighted I may return item within 10 days for full refund of purchase price.

NAME.....
ADDRESS.....
CITY..... STATE.....

☐ Send Item listed. I will pay postman plus postage. ☐ I want to save postage. I am enclosing full payment. Same money back guarantee applies.

New WRIST WATCH WITH AMAZING MECHANICAL BRAIN

- It "Remembers"
- It Tells Time
- It Tells Date

COMPARE IT AT $50

$8.95 PLUS 90c FED. TAX

Included **FULL YEAR GUARANTEE** And Lifetime Service Certificate

Measures Speed. Measures Distance. Records up to 12 Hours. OVER 40 QUALITY FEATURES. Precision Jeweled. Imported Swiss Movement. Accurate. Dependable.

Push-Button Stop & Start. Red Sweep-Second Hand. Unbreakable Crystal. Triple Chrome Plated Case. Shock Resistant. NITE-VUE RADIUM GLOW DIAL. Anti-Magnetic. Times Shop work. Times Photography. Times Sports. Times Races. Times Lab. work. Times Planes. Smart Expansion Band Included.

FREE 10 DAY TRIAL

SEND NO MONEY

ACT NOW • MAIL COUPON!

YOUNG PRODUCTS
DEPT. 593
2603 ELMHURST, DETROIT 6, MICH.

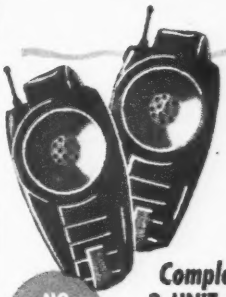
Please rush MECHANICAL BRAIN WRIST WATCH @ $8.95 plus 90c Fed. Tax

If I am not delighted I may return item within 10 days for full refund of purchase price.

NAME.....
ADDRESS.....
CITY..... STATE.....

☐ Send Item listed. I will pay postman plus postage. ☐ I want to save postage. I am enclosing full payment. Same money back guarantee applies.

New . . . Unique ELECTRONIC WALKIE-TALKIE Communication System



NO BATTERIES

NO PLUG-IN

Complete 2 UNIT SET

$3.95 LIMITED OFFER

FREE 10 DAY TRIAL

Perfect for room to room, house to garage, etc. No batteries, no tubes. Complete two way telephone system. Works at amazingly long distances. Handy pocket size. Electronic voice powered. No license or permit needed. **Two units complete with wire, ready to use.** Quantity limited.
Order today.

SEND NO MONEY

WHAT A BUY!

RUSH COUPON TODAY!

YOUNG PRODUCTS
DEPT. 593
2603 ELMHURST, DETROIT 6, MICH.

Please rush WALKIE TALKIE COMMUNICATION SYSTEM at Bargain Price of $3.95.

If I am not delighted I may return item within 10 days for full refund of purchase price.

NAME.....
ADDRESS.....
CITY..... STATE.....

☐ Send Item listed. I will pay postman plus postage. ☐ I want to save postage. I am enclosing full payment. Same money back guarantee applies.

The Editor's Workbench

Old Paint, otherwise known as MI Guy, gets out the turps and the brushes for a fast Fall rejuvenation of the woodwork—and urgently recommends that you do likewise.

Do It Yourself

A fortnight ago or so, whilst strolling about my lavish suburban acres, I noticed that the sumptuous manor home in which I dwell showed certain signs of deterioration. Matter of fact, it looked downright shabby. Especially around the woodwork where the white paint used to be.

Now, this little peoplecoop of mine has ten double-hung windows (medium-size), two picture windows (smallish) and two doors (average). It also has a single overhead-type garage door, of wood, plus minor footage of miscellaneous trim likewise protected and beautified (at one time) with paint. All now, alas, in a state of leprous dilapidation. Peeling, as it were, like crazy.

So I said to myself, "Cousin, a few hours of earnest endeavor by a practiced artisan, plus a bucket or two of paint, should cost but a pittance and produce virtually a new mansion for you. After all, the walls of the hacienda are of brick and there is, therefore, but a small area of trim to bedaub by brush. Let us forthwith engage some deserving local painter to do the job. Whilst we loll in the shade of a eucalyptus tree, studying life through the frosty bottom of a mint julep glass."

So, after hardly much more effort than it would take to obtain an audience with the Pope, I eventually succeeded in cajoling several of the neighborhood paintsmiths into giving me an estimate. After much cocking of the eyes, belaboring of the brain, and computation with the pencil, each of these craftsmen came up with his bottom-dollar estimate. It was a junior job, they assured me, hardly worth trifling with. But if I would go to church every Sunday and stop beating my wife and otherwise shape up, they might consider undertaking the task for—well, just for me, they'd do it for $200.

Two hundred bucks. For one coat. No scraping. No sandpapering. No blowtorching of the tired tatters of old paint. And no guarantee, of course, that the new coat of molasses-like goo would even survive the first blasts of winter or touch of summer sun. Just one thick coat, totalling no more than two gallons of paint, hastily and no doubt carelessly applied—all this for two hundred hard-won dollars.

That is why you will find me, these weekend afternoons and cool, cool evenings, up a ladder, making with the paint and the brush. And that is why, as if you didn't know it, so many of us people are applying our own floor tiles and hanging our own wallpaper and fixing our own electrical appliances. That is why the post-war "Do It Yourself" boom is the biggest thing since Old Man Noah built the Ark.

Against labor I have no gripe. Those boys have to make a buck too. But it has reached the point where if you hire a guy to unclog a sewer or slap a little paint on a wall or put in a new outlet, you will find yourself working for him because he will charge you more for a day's work than you make yourself.

But I guess I shouldn't complain. This "Do It Yourself" dodge has been great for our business and it is one of the main reasons why twice as many people read MECHANIX ILLUSTRATED today as did before the war. For going on to 25 years good old MI has been showing you how to do it yourself in the quickest, best and cheapest way. And we're going to keep right on showing you, only more so.

And now, if you'll excuse me, I gotta go shinny up a ladder. I figure that paint job will cost me about ten bucks—and who doesn't want to save himself $190 these days?

See you next month.—*Bill Parker* •

YOU'RE WRONG *If You Think You Can't* MAKE *and* REMODEL FURNITURE!

Make Us Prove It In a Week! Send No Money—Just Mail Coupon!

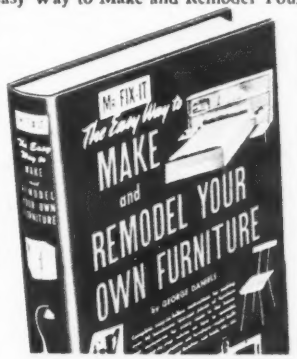
YOU never saw anything like it! Even in minutes, even for pennies, you can make and remodel the most fascinating things for your home! For a fraction of ready-made prices, you can build stunning new furniture for *every* room—everything from a disappearing vegetable bin to a glamorous Hollywood bed. You can remodel old furniture to smart, modern lines for your home, or for others at a fat profit! You can reupholster chairs, sofas, redesign and refinish tables, cabinets, almost anything! It's easy, it's fun—and you make and save real money.

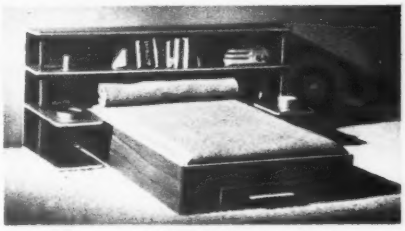
Make us *prove* that you can do it! Make us *prove* that all you need are George Daniels' remarkable furniture designs and his shortcut directions for easy construction. See for yourself how this famous craftsman and popular writer has eliminated complicated, laborious processes and reduced everything to a few simple operations. See how *you* can use his own original ideas to create stunningly beautiful furniture in astonishingly little time, at incredibly low cost. See why you don't need carpentry or cabinet-making experience or special tools! Don't send a penny now—just the coupon below—and get

"The Easy Way to Make and Remodel Your Own Furniture"

This fascinating volume presents 91 beautiful pieces of furniture with complete directions for making. Every step clearly shown in over 300 diagrams and photos. Every detail covered, from basic materials to finishes. Even though you've never dreamed of making your own furniture, you can now turn out all kinds of handsome pieces with ease. List at right suggests only a few of the items you can make. George Daniels also shows you how to do complete reupholstery jobs, how to remodel old-fashioned "eyesores".

YOURS FOR FREE TRIAL Try these amazing new ways in furniture-making and remodeling for yourself, without risking a cent. Let us send you George Daniels' big book, "The Easy Way to Make and Remodel Your Own Furniture" to examine *and use* FREE. If not delighted return book in seven days and pay nothing. If you keep it, send only $1.95 plus few cents shipping charge in seven days, and $2.00 one month later. Don't miss this great opportunity. 304 big pages, durable cloth binding. *Greystone Press,* Dept. 507, 100 Sixth Avenue, New York 13, N. Y.





Make This $250 Hollywood Bed For Just a Few Dollars!

It's amazing what beautiful furniture and home accessories you can make out of inexpensive materials, in spare hours. Master craftsman George Daniels shows you how to make this Hollywood bed, and also gives

Complete Directions for Making:

Shelves to Divide a Room • Variable Bookshelf Unit • Wood and Metal Modern Chairs • Television Table • Telescoping Television Seats • Four-in-One Music Cabinet • Multi-Purpose Table • Add-a-Unit Bookcases • Desk that becomes Buffet Table • Coffee Table of Pine and Metal • Chair with Storage Space • Fireplace Bench • Drum-Style Cocktail Table • Modern Serving Wagon • Vegetable Bin • Kitchen Snack Bar and Ironing Board • Folding Kitchen Stool-Step-ladder • Two Lazy Susans • Modern Magazine Rack • Folding Party Bar • Hanging Shelves • Modern Lamp • Bunk Bed • Toy Chest • Clown's House • Wardrobe Closet • Playpen • Child's Desk • Indoor-Outdoor Playhouse • Hollywood Headboard to Fit Bed • Modern Bed for Your Spring and Mattress • Folding Stool • Space-Saving Medicine Cabinet • A Stick-in-the-Lawn Table • Stand for Portable Charcoal Grill • Dog House • Birdhouse • Repairing • Remodeling • Reupholstering.

MAIL COUPON—NO MONEY NEEDED

Greystone Press, Dept. 507 MI-10
100 Sixth Avenue, New York 13, N. Y.

Send me on FREE TRIAL George Daniels' big book "The Easy Way to Make and Remodel Your Own Furniture." In 7 days I'll either return the book or send $1.95 plus few cents shipping charge as first payment and $2.00 balance one month later. Complete price, only $3.95.

Name..... (please print)

Address.....

City..... Zone..... State.....

☐ SAVE MONEY! Check here if you prefer to enclose $3.95 with coupon, in full payment, and WE pay shipping charge. Same 7-day return privilege under Money-Back Guarantee.

In Canada: 3rd Ave. E., Owen Sound, Ontario

DO YOU THINK IN CIRCLES?

Do you ask yourself, "How shall I begin; what shall I do next?" Have you a confusion of ideas? Mastery in life, success in any enterprise, comes from the subtle ability to marshal your thoughts, to call to the fore, when an emergency arises, the proper mental powers. Mentally, you are an aggregate of forces. Why dissipate them because of lack of knowledge of how to properly use them? Learn to unite them, and you will have at your command, a *tremendous power* for accomplishment.

SEND FOR FREE BOOK

The Rosicrucians have preserved for centuries knowledge of the secret method for the development of mind power and the direction of man's unused inner faculties. This wisdom, not strange or mysterious, has changed the course of life for many men and women throughout the world. Write for the free, sealed book which explains how you may obtain this helpful information. Address: Scribe M.A.C.

The ROSICRUCIANS
(AMORC)
San Jose California

— USE THIS COUPON —

Scribe M.A.C.
The Rosicrucians
San Jose, California

I am sincerely interested in an intelligent method for attaining a mastership of life. Send me without obligation, your FREE Book which explains how I may receive and use your age-old method.

Name.....

Address.....

City.....

MEN! send for this MONEY-MAKING OUTFIT FREE!

MAKE UP TO $15.00 IN A DAY

Do you want to make more money in full or spare time . . . as much as $15.00 in a day? Then write for this BIG OUTFIT, sent you FREE, containing more than 150 fine quality fabrics, sensational values in made-to-measure suits and overcoats. Take orders from friends, neighbors, fellow-workers. No experience needed. You'll say it's the greatest way to make money you ever saw.

PERSONAL SUITS TO WEAR

Pay No Money! Send No Money!

Our plan makes it easy for you to get your own personal suits and overcoats without paying 1c, in addition to your big cash earnings. This offer is limited. Rush your name and address for big FREE OUTFIT—today!

PIONEER TAILORING CO., Dept. M-1084
Congress and Throop Sts., Chicago 7, Ill.

CARBURETOR TOO RICH MAKES MOTORIST TOO POOR

Car owners who are wasting money, getting poor gas mileage due to over-rich mixtures, will be pleased to learn how to save gasoline by **VACU-MATING OVER-RICH MIXTURES.** Vacu-Matic fits all cars, trucks and tractors. *Automatic* and operates on the supercharge principle. Easily installed in a few minutes.

SALESMEN WANTED! Big Profits

For FREE particulars, how you can install one on your own car for introducing, just send your name and address on a postcard to **VACU-MATIC, 7617-1932 W. State St., WAUWATOSA, WIS.**

LEARN MEAT CUTTING

through actual practice. Profitable Meat Cutting and Self Service Meats taught easily, quickly. LEARN BY DOING at Toledo in just eight short weeks under actual market conditions. For beginners or men with experience. All subjects taught thoroughly and completely. Diploma. Job help. Get store of own. People must eat. School in operation over 25 years. Approved for GI training. Send today for FREE illustrated catalog. No obligation.

NATIONAL SCHOOL OF MEAT CUTTING, Dept. 52-J, Toledo 4, Ohio

REAL ESTATE — BE A BROKER

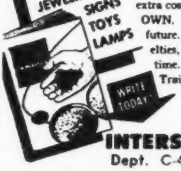
PAYS BIG! SEND FOR FREE, BIG, ILLUSTRATED CATALOG NOW! Graduates report making substantial incomes. Start and run your own business quickly. Men, women of all ages, learn easily. Course covers Sales, Property Management, Appraising, Loans, Mortgages, and related subjects. **STUDY AT HOME** or in classrooms in leading cities. Diploma awarded. Write TODAY for free book! No obligation.

FREE BOOK TELLS HOW

WEAVER SCHOOL OF REAL ESTATE (Est. 1936)
Suite 300 Law Bldg. Dept. 1M Kansas City, Mo.

MAKE EXTRA MONEY **PLASTICS** LEARN AT HOME

LEARN HOW TO MAKE fast-selling PLASTIC NOVELTIES FURNITURE JEWELRY SIGNS TOYS LAMPS



There are RICH OPPORTUNITIES for MEN and WOMEN with "know-how" in Plastics. Interstate's new Plastics course tells and shows how to make hundreds of fast selling items out of Plastics. Gives complete training in fabrication, casting, lamination, molding, internal carving, etc., in simple, easy, step-by-step language and pictures. Plastics and Fabricating Kits for 23 valuable Plastic items come with training at no extra cost. START A PLASTICS BUSINESS OF YOUR OWN. No other industry holds such promise for the future. You can make big money manufacturing novelties, toys, signs, etc., in your own home in spare or full time. Don't wait! Learn NOW how Interstate's Plastics Training qualifies you for success in the Plastics field.

PLASTICS AND SUPPLIES FURNISHED FOR 23 VALUABLE PROJECTS

INTERSTATE TRAINING SERVICE
Dept. C-4K Portland 13, Oregon

Now IN YOUR OWN HOME *Learn*

TELEVISION RADIO

the Amazingly Effective

D.T.I. WAY

Above: Work over **300** fascinating experiments with this equipment

You KEEP all test equipment

1. Build over 300 fascinating experiments from 16 BIG SHIPMENTS of Electronic-Radio parts which you KEEP.

2. Build valuable commercial-type test equipment—as shown to the left—which you KEEP. This includes a quality OSCILLOSCOPE—a must for Television work.

3. Use a 16 mm. movie projector and new series of Hollywood produced instructive movies—a wonderful aid to help you grasp important fundamentals faster...easier...better.

4. Enjoy well-illustrated, easy-to-read lessons with handy FOLD-OUT diagrams.

5. Get an honest-to-goodness EMPLOYMENT SERVICE to help you get a good job after graduating—or assistance in starting your OWN SALES AND SERVICE BUSINESS. Mail coupon today for the complete details.

—with the aid of BOTH HOME EQUIPMENT and HOME MOVIES

What will mailing the coupon below *do for YOU?* Just this! You'll find out about one of today's most remarkable . . . practical ways to prepare to get into America's amazing billion dollar opportunity field of TELEVISION-RADIO-ELECTRONICS. You'll see how to get into fascinating work that pays well...that offers one of America's most promising futures... that enables you to start your own business almost "on a shoe string," if you prefer this to a job opportunity.

And above all, you'll get some GOOD NEWS especially welcomed by men anxious to earn REAL MONEY in this thrilling field. For you'll see that NOW you can get the kind of practical, laboratory-type training so desirable for making real progress in Television-Radio-Electronics . . . and *WITHOUT* LEAVING HOME.

You'll see that DeForest's Training, Inc. sends everything needed to set up your own HOME LABORATORY. You get and keep the same type of basic electronic equipment used in our modern Chicago Training Laboratories. You get home training that includes the knowledge and experience gained from training thousands of students first hand in Chicago. And to top it all, you use DTI's amazingly effective and exclusive home training aid—INSTRUCTIVE MOVIES. But why not get the complete story? Mail coupon today for information-packed literature.

MODERN LABORATORIES

If you prefer, get all your preparation in our new Chicago Training Laboratories—one of the finest of its kind. Ample instructors, modern equipment. Write for details!

MILITARY SERVICE!

If you're subject to military service, the information we have for you should prove very helpful. Mail coupon today.

Get BOTH of these colorful, information- packed folders FREE

Mail Coupon Today

DeFOREST'S TRAINING, INC. Dept. MI-10-1
2533 N. Ashland Avenue, Chicago 14, Ill.

I would like valuable, information-packed folders showing how I may get started toward a good job or my own business in Television-Radio-Electronics.

Name _____ Age _____
Street _____ Apt. _____
City _____ Zone _____ State _____

DeFOREST'S TRAINING, INC.
AFFILIATED WITH
De Vry Technical Institute
CHICAGO 14, ILLINOIS

A SIMPLE WAY TO BE AN ARTIST

TRIAL PLAN makes it easy to start

Let us PROVE we can teach you to draw at home in your spare time!

You don't need previous art training. You don't have to risk a big sum of money. WSA now offers you its famous, complete, and modern **home** study course in **Commercial Art, Designing and Cartooning**—the same high calibre instruction that has started thousands to profitable careers in art.

Only WSA Offers You This 38-Year Proven Method:

Trial plan proves you can learn at home in spare time. We teach you from the beginning—step-by-step. Many students begin to earn extra money even before they finish the course. Qualify for well-paying positions in this interesting field.

Two complete art outfits included. You get the first one when you enroll—with all the material you need to start. Don't delay. Take your first step **now** toward **drawing for money and pleasure.**

MAIL COUPON FOR FREE BOOK

WASHINGTON SCHOOL OF ART
Studio 2010F, Washington 5, D. C.
Send Free Book, "Art for Pleasure & Profit." No salesmen. (Please print)

Name..... Age.....
Street.....
City..... Zone..... State.....
☐ I am eligible Veteran for G.I. training

RUGER
AUTOMATIC PISTOLS

.22 Standard Model—$37.50

Write Dept. M1-9 for literature

STURM, RUGER & CO., INC.
SOUTHPORT, CONNECTICUT

MEN WANTED!

Make $15-$20 in Few Hours Spare Time—up to $210.00 a Week FULL TIME—with Amazing
D-FROST-O-MATIC!

Millions of housewives want this sensational new Automatic Refrigerator Defroster! No more messy hand defrosting! Just plug in D-FROST-O-MATIC and refrigerator is defrosted *automatically* every night! Sales easy, sure when you leave D-FROST-O-MATIC on FREE TRIAL—housewives won't let you take it out! Saves money, food, time, work! ***Big profits for you***—up to $210.00 a week full time—$15 to $20 in just a few spare hours! Start spare time and build big, prosperous business . . . quickly, easily!

SELLY of California started in his spare time and now sells 1500 D-Frost-O-Matics a month!

Rush Name Today for Profit Details and FREE TRIAL PLAN!

More than **29,000,000** prospects waiting! Rush your name and address **today.** We'll airmail exciting facts, proof and sure-profit Free Trial plan. No obligation. Write today.

D-FROST-O-MATIC, Dept. N-3
173 W. Madison Street, Chicago 2, Ill.

WHAM-O SPORTSMAN * **1.50** POSTPAID 35-LB. PULL!

HITS LIKE A .22 RIFLE—
KILLS RABBITS, SQUIRRELS.
Powerful, silent, accurate.
For hunting, target, routing pests.
Sportsmen's choice sold world over!

HUNTING SLINGSHOT
Heavy duty 7" ash stock.
40 steel balls, extra rubber, target.
GUARANTEED. At dealers, or send $1.50 to
Wham-O Mfg. Co. Box 8N, South Pasadena, Calif
*** Professional model of Nat'l Slingshot Assn.**

SEND FOR THIS FREE!

Make money. Know how to break and train horses. *Write today for this book FREE*, together with special offer of a course in Animal Breeding. If you are interested in Gaiting and Riding the saddle horse, check here ( ) *Do it today—now.*

BEERY SCHOOL OF HORSEMANSHIP
Dept. 11510-D **Pleasant Hill, Ohio**

$750 BUILDS 4 ROOMS & BATH!

WHY PAY RENT? For Seven Hundred and Fifty dollars and 30 days of your spare time you can build yourself this Beautiful Home.

Living room 11x15. Front bedroom 9x11. Back bedroom 10x12. Kitchen 9x11. Bath 5x8. Hall 3x4. Wind out steel Casement windows. Concrete block, stuccoed. $1.00 brings you Step-by-Step Instructions, Blueprint & Material List.

L. H. FARROW, Dept. B
Box 645 **Columbus 16, Ohio**

PORTABLE GARAGE
$6.75

PLASTIC VINYL **USE IT ANYWHERE!**

• Goes wherever your car goes • Folds compactly • Keeps rain, snow, dust, salt air, sun or sleet away • Protects your car's finish • Durably constructed of vinyl plastic that is long wearing and tough • Nylon threads for extra security • Spring-tite elasticized bottom, holds securely in all kinds of weather • Fits all makes and models • Direct from manufacturer • Enclose check or money order for $6.75, or sent C.O.D.

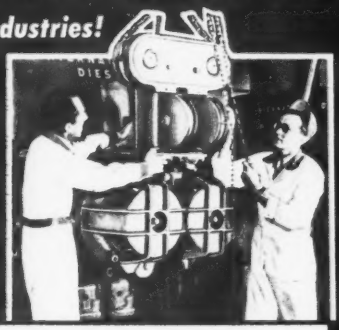
10-Day Money Back Guarantee

MARDO SALES CORP.
480 Lexington Ave., Dept. G-648, New York 17, N. Y.

GET SHOP-METHOD HOME TRAINING

for SUCCESS in Today's Top Industries!

SEND COUPON TODAY for FREE BOOK and COMPLETE SAMPLE LESSON!



RADIO-TELEVISION & ELECTRONICS OR AUTOMOTIVE-DIESEL & ALLIED MECHANICS

Like a business of your own . . . or a good job with a big firm . . . and get paid for what you know? Shop-Method Home Training in Radio, Television, Electronics will bring you the job...money...you've always wanted. 105 *million* Radios, 3100 stations...16 *million* TV sets, over 100 TV stations...many more, now Govt. restrictions are off. Defense industries want trained men for interesting, good pay jobs. Get into this opportunity-making industry...advance fast. Find out how...mail coupon...TODAY!

I GIVE YOU STANDARD PARTS! INCLUDING TUBES!

—they are yours to keep. You actually learn by doing, build generators, receivers, a big Super-Het radio.

THIS PROFESSIONAL FACTORY-MADE MULTI-TESTER IS YOURS!

Valuable equipment every Radio-TV man needs. Yours to keep!

INVESTIGATE NOW!

Want to be your own boss . . . or get into booming industries? 8 *million* older cars need big, profitable services and repairs. Farm machinery is going Diesel. Defense industry begs for more and more trained mechanics for high-pay jobs. National Schools Shop-Method Home Training prepares you for all Automotive, Diesel, Allied Mechanics opportunities. Helps you get the security, good pay you've always wanted. Send coupon for your Free Book and Sample Lesson now!

LET NATIONAL SCHOOLS of Los Angeles, California, a Resident Trade School for almost 50 years, train you at home for today's unlimited opportunities. Pick your industry—mail coupon below now!

EARN EXTRA MONEY WHILE YOU LEARN!

I show you how to earn extra money *while learning!* Many men have paid for their entire course in this way. You can, too. Remember: Shop-Method Home Training covers *every phase* of the industry — in an interesting step-by-step way. Why wait—take the first step to success—mail the coupon today!

DRAFT AGE? Training helps you get the service branch you want, advance fast. That means higher pay and grade, more prestige — right away! Don't take a chance — mail coupon *now!*

I GIVE YOU THE TOOLS OF YOUR TRADE! Big professional-quality kit of tools of your trade — and all-metal tool box. All yours to keep —part of your course; they help make your training more practical — start you off right!

NATIONAL SCHOOLS

LOS ANGELES 37, CALIFORNIA

Established 1905

In Canada: 193 East Hastings Street Vancouver 4, B.C.

FREE! RADIO-TV BOOK & LESSON!

FREE! AUTO-DIESEL BOOK & LESSON!

DON'T PUT IT OFF GET THE BIG SALARY YOU'VE ALWAYS WANTED!

MAIL TODAY — YOU'RE "ON YOUR WAY"!

NATIONAL SCHOOLS, Dept. A-102
4000 S. Figueroa Street
Los Angeles 37, California

Mail in envelope or paste on postal card

I want to "get going"! Send me Free Book I checked and Free Sample Lesson. I understand no salesman will call.

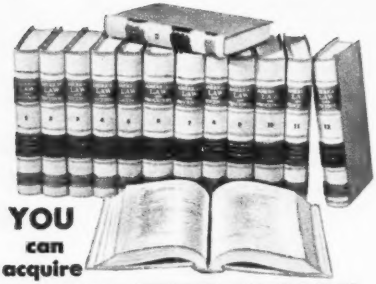
☐ *My Future in Radio-Television & Electronics*
☐ *My Future in Automotive-Diesel & Allied Mechanics*

NAME _____ AGE _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

VETS! Check here if released from service less than 4 years ago.



YOU can acquire

LAW NIGHTS AT HOME! L L.B. DEGREE

LaSalle's famous Law Library—used as reference in many Law libraries and Law offices—has enabled thousands to master Law surprisingly fast, in spare hours at home, for business and professional advancement.

These 14 remarkable volumes, compiled by leading professors and lawyers, cover the whole basic field of Law in condensed, orderly, simplified manner.

You advance rapidly with this great library, plus special lectures furnished. We guide you step-by-step with personalized Problem Method of instruction . . . you *learn by doing*—handling legal problems—not by memorizing rules.

Send for two FREE 48-page booklets, "Law Training for Leadership," and "Evidence," answering questions about Law and its value to you, and telling how LaSalle Law graduates are winning rapid advancement in business and public life. Mail coupon below. No obligation.

LA SALLE EXTENSION UNIVERSITY
A Correspondence Institution
417 S. Dearborn St., Dept. 10493L, Chicago 5, Ill.

Send me your two FREE booklets described above, without obligation.

*Name*_____ *Age*_____

*Street*_____

*City, Zone & State*_____

EVERY PASSENGER TIRE
UNCONDITIONALLY GUARANTEED
plus TIRE INSURANCE FREE

Here's DOUBLE proof that we bear the loss if your passenger tire wears out within the guarantee period or is damaged in any way (except willfully). Don't take risks: we send FREE insurance certificate PLUS written unconditional guarantee with your order.

10% off ON TWO OR MORE USED TIRES

LOW COST QUALITY TIRES

Unconditional		Six Months' Guarantee plus Tire Insurance Free			
600-16	$3.50 ea.	650-16	$3.75 ea.	550-17	$3.95 ea.
600-15		640-15		475-19	
650-15		550-16		710-15	
550-15		670-16		760-15	

BETTER GRADE PASSENGER TIRES

Unconditional One Year Guarantee plus Tire Insurance Free							
600-16	$5.95	700-16	$7.59	700-15	$5.59	550-16	$5.95
600-16 (6)	6.50	600-15	5.59	750-16	12.25	550-17	5.75
650-16	5.79	650-15	5.59	550-15	5.59	475-19	5.75
640-15	5.95	710-15	6.50	820-15	7.50	760-16	7.75
670-15	5.95	760-15	6.75	670-16	6.95		

MUD AND SNOW TIRES
TWO YEAR WRITTEN GUARANTEE

600-16	$6.95	900-16	$12.95	750-20 Reg. $12.50	Spec. $15.95
650-16	7.50	650-16 (6)	9.50	650-15	6.50

EXTRA VALUE TRUCK TIRES
ONE YEAR WRITTEN GUARANTEE

600-20	$10.75	750-20	$14.50	825-20	$21.50	1100-20	$26.95
650-20	11.75	32x6 (8)	11.75	900-20	19.50	1100-22	24.50
700-20	12.50	32x6 (10)	12.50	1000-20	20.00	750-20(10)	18.00

Complete line of High Mileage Tires in stock. Write for price list for sizes not listed. Take off 10% on orders for two or more tires. All prices F.O.B. Richmond.

MAIL ORDERS PROMPTLY FILLED. Send check or money order with this ad.

SAFTYRE CO., INC.
"FOR THAT SAFE TIRE"
Dept. MI, 1801 East Broad Street PO BOX 2254, RICHMOND, VA.

NEW! "VIOLIN FINISH" WOOD CLARINET

WILL NOT CRACK

EASY TO PLAY

Amazing, new Pan-American wood clarinet in beautiful "violin finish," guaranteed *not to crack!* No other clarinet like it. Musically and mechanically superior. See it and other fine Pan-Americans at dealers everywhere, or write for free literature. Mention instrument. Address Dept. 1030.

Write FOR FREE FOLDER on instrument of your choice

PAN-AMERICAN
BAND INSTRUMENTS
Division of C. G. CONN Ltd., Elkhart, Ind.

STOPS FOGGY WINDSHIELDS
NEW Chemical Mitt

Amazing Discovery! Autoists wild over new FOG-STOP Windshield Cleaner. Simply glide over windshield chemically-treated Mitt—at once glass sparkles crystal clear. Blurry mist, frost, sleet, snow disappear like magic. Stops fogging. *Sells like wild!*

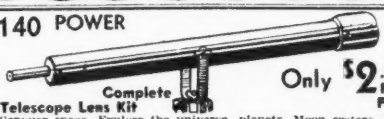
SAMPLES FOR AGENTS Sample offer sent immediately to all who send name at once. Hurry. Postcard will do. SEND NO MONEY—your POST PAYING. KRISTEE CO., Dept. 757, AKRON 8, OHIO

ENGINEERING DEGREE IN 27 MONTHS

INDIANA TECHNICAL COLLEGE

Aeronautical, Chemical, Civil, Electrical, Mechanical, and Radio Engineering (inc. TV and Electronics). Drafting, 1-yr. Gov't approved for G.I.'s. Low rate. Earn board. Large industrial center. Students from 48 states, 21 countries. Demand for graduates. Enter Dec., March, June, Sept. Catalog.
1010 E. Washington Blvd., Ft. Wayne 2, Ind.

140 POWER



Complete Telescope Lens Kit

Only $2.95 Post Paid

Conquer space. Explore the universe, planets, Moon craters, New stars. Complete lens kit consists of 54 inch focal length ground and polished objective lens. 140 power astronomical Eyepiece lenses. 100 power Eyepiece lens. 20X lens and all necessary lens fittings. Easily assembled from instructions. Money back Guaranteed. **BUSSE SALES COMPANY, Hartford 3, Conn. Dept. ML-6**

TASOPE PHOTO-ENGRAVING PLANTS

MATERIAL COST OF THIS CUT 1/4" SELLING PRICE $1.00 AND UP

Establish your own profitable PHOTO-ENGRAVING business. Make cuts for newspapers, printers, and advertisers. Make etched name plates, plaques, etc. Instructions furnished, no experience necessary. Sold direct from factory since 1931. First five hundred cuts sold locally or by mail will pay for plant and pay you well for your time. Write for FREE catalog.
TASOPE, DEPT. MI-10, AURORA, MO.

START A BUSINESS OR MAKE MONEY SPARE TIME

LEARN AT HOME
UPHOLSTERING

Easy to learn at home—in a few months! Easy to start a shop, or earn spare-time profits! Make money as you train. Complete tool set, all materials to build ottoman, included with illustrated lessons. Low terms. *Write for valuable booklet today!*

COMMERCIAL TRADES INSTITUTE
1400 Greenleaf Ave., Chicago 26, Ill. Dept. U3-10

"I FIXED A MOTOR AFTER ANOTHER MECHANIC HAD WORKED ON IT HALF A DAY. WITH YOUR MANUAL I DID IT IN HALF AN HOUR!" *Curtis Auberry* Murfreesboro, Tennessee

No Wonder Thousands Find It *Easy to Lick*

AUTO REPAIR JOBS

They Never Dreamed They Could Do!

USED BY U. S. ARMY AND NAVY

MOTOR's AUTO REPAIR MANUAL Shows Exactly How to Do ANY Job on ANY Car Built from 1935 thru 1952! Over 800 Big Pages of Step-by-Step Instructions—Over 2400 "Show-How" Pictures!

THOUSANDS of men are raving about MOTOR's BIG NEW AUTO REPAIR MANUAL. It takes the *mystery* out of auto repairs, shows you exactly WHAT to do, and HOW.

Now you can "breeze thru" any job on any car—from a 17-year-old "jalopy" to a gleaming new '52. Just look up make, model, and job in the index—and go to it. Easy step-by-step instructions, over 2400 "how-to-do-it" photos, drawings, diagrams, and over 38,000 specifications and dimensions make every operation a "snap."

Why You CAN'T Go Wrong!

Takes nothing for granted. *Starts at the very beginning*—leads you easily, quickly, thru whole job! Beginners find clear illustrated guidance on every kind of repair and service job imaginable! Experts will value the precise, time-saving factory repair procedures! No wonder hundreds of thousands of men call it the "Auto Repair Man's Bible!"

The "Meat" of Over 170 Shop Manuals!

Engineers from every auto plant in America worked out these time-saving procedures for their own motor car line. Now the editors of MOTOR have gathered together this wealth of "Know-How" from over 170 Official Factory Shop Manuals, "boiled it down" into clear terms in one handy illustrated book!

Here's how to make the simplest 60-second carburetor adjustment—or how to completely rebuild the entire transmission. How to service and repair all types of Engines (including New De Soto, Lincoln, Ford Engines) . . . Chokes . . . Fuel Pumps . . . Ignition Systems . . . Generators . . . Carburetors . . . Starting Motors . . . Clutches . . . All Transmissions (including New Dual-Range Hydra-matic) . . . Overdrives . . . Universals . . . Brakes . . . Power steering, etc.

SEND NO MONEY

Send no money! Enjoy this great book—at our risk—for a full week, FREE! Test it right in your own garage or shop. Guaranteed to pay for itself in 7 days! If it doesn't, simply return it and pay nothing. Mail coupon NOW to MOTOR Book Dept., Desk 3M, 250 West 55th Street, New York 19, N. Y.

Covers 851 Models—All These Makes

Buick	LaSalle
Cadillac	Lincoln
Chevrolet	Mercury
Chrysler	Nash
Crosley	Nash Rambler
DeSoto	Oldsmobile
Dodge	Packard
Ford	Plymouth
Frazer	Pontiac
Henry J	Studebaker
Hudson	Terraplane
Kaiser	Willys
Lafayette	

A Few More of the Letters of Praise

"Instructions so clear I have no trouble learning about any car. Now mechanic in big plant."—S. ORDONEZ, Cal.

"So complete and easy to understand, have done jobs with Manual I wouldn't have attempted without it."—C. L. VANERSTROM, Mich.

"Paid for itself on first two jobs. Saved me valuable time by eliminating guesswork." — W. SCHROP, Ohio

MAIL COUPON NOW FOR 7-DAY FREE TRIAL

MOTOR Book Dept. Desk 3M
250 West 55th Street, New York 19, N. Y.

Rush to me at once: (Check box opposite book you want)

☐ **MOTOR'S New AUTO REPAIR MANUAL.** If O.K. I will remit $1 in 7 days, plus 35c delivery charge—then $2 monthly for 2 months, and a final payment of 95c a month later. Otherwise I will return book postpaid in 7 days. (Foreign price, remit $8 cash with order.)

☐ **MOTOR'S New TRUCK & TRACTOR REPAIR MANUAL.** (Described at left.) If O.K. I will remit $2 in 7 days, and $2 monthly for 3 months, plus 35c delivery charge with final payment. Otherwise I will return book promptly. (Foreign price, remit $10 cash with order.)

Print Name..... Age.....

Print Address.....

City & Zone.....State.....

☐ **SAVE 35c** delivery charges by enclosing WITH COUPON check or money order for full payment of $5.95 for Auto Manual (or $8.00 for Truck Manual). Same 7-day return-refund privilege applies.

Same FREE 7-Day Offer Applies on MOTOR's New TRUCK & TRACTOR REPAIR MANUAL

A "must" for mechanics, truck specialists, service stations, fleet owners. Covers EVERY job on 3058 truck and 157 farm tractor models made from 1936 thru 1951! Over 2267 pictures, 925 pages, 300,000 facts. Used by Armed Forces.

All types of Gasoline Engines, Fuel Systems, Governors, Lubrication Systems, Starters, Generators, Clutches, Transmissions, Axles, Brakes, Steering, etc.

For FREE 7-DAY TRIAL, check box in coupon.

Invention Clinic

JOSEPH H. KRAUS

The Garden Sprinkler

ALTHOUGH performance characteristics of a new garden sprinkler can be determined with precision by the average inventor, it is surprising that so many ineffective types have been patented.

Probably 100 different lawn sprinklers are on the market today. In my opinion, not a single one is absolutely top class. This same opinion applies to many hundreds of patents in this field examined by this writer. None was seen which contained the requirements for a top class rating.

The Ideal Sprinkler

An ideal sprinkler should give an even distribution of water over a limited area and with varied water pressures. It should apply water in controllable amounts with respect to area. It should not create erosions when used on sloping lands. A rate of a fifth to a third inch of water per hour under 25 pounds per square inch of pressure will usually avoid erosion.

Because most land areas are blocked off, the popular spinner-type sprinkler cannot meet the ideal. Just try to cover a sheet of paper with a number of circles so that you will cover the area completely without overlap or waste of water along the edges.

This means that the square or rectangular water distribution system should be considered. Yet, as far as I know, there is not a single oscillating sprinkler either manufactured or patented which is adjustable both ways. Although the length of throw may be regulated in some, the width of the band remains fairly constant, unless pressure is cut way down. This results in a great waste of water, particularly when wetting down a narrow band such as exists between the concrete strips of a drive, between curb and sidewalk or along borders adjacent to buildings. An area as large as possible should be covered in a single placement because the sprinkler may have to remain in one position for from three to five hours to give one inch of water to the soil.

Apparently no manufactured sprinkler automatically regulates for changes in water pressure. Yet, pressures change considerably from hour to hour in many of our large cities. This means that any regulation of the sprinkler which would be correct at one hour would be overshooting and wasting water three hours later. An automatic pressure regulator could be a simple thing to add to or include in the design.

Spray Control

Then there is the matter of fineness of spray or distance of throw. Usually here's how the sprinkler is regulated: You set the control at what you think is correct, walk 75 feet to the faucet or further, turn on the water, then amble back to observe the sprinkler. It probably doesn't suit, so you trot back to shut off the water and repeat the operation several times. With each new location or pressure change, you go through the routine again.

There are dozens of different methods which could be utilized to permit settings to be made remotely, thus to avoid the troubles. It is true that some of the spinner-type sprinklers have settings marked for designating circle diameters, but even these are only approximate as long as pressure and fineness of spray remain constant.

You can argue pro and con about the advisability of having a controlled spray. One side holds that a very fine spray conserves water and is ideally suited for continuous sprinkling particularly of newly made lawns which then become well rooted. Also there is a considerable saving of seed, particularly of the slow germinating varieties. The opponents point out that winds scatter the fine spray

[*Continued on page 22*]

INVENTORS

Learn how to protect your invention. The U. S. Patent Laws provide that any new and useful art, machine, article of manufacture, or composition of matter, or any new and useful improvement thereof, may be patented if the act of invention is involved. Therefore, every inventor with a valuable invention should take advantage of the Patent Laws and proceed for patent protection in order to safeguard his rights.

A patent gives the inventor the exclusive right to prevent others from making, using, or selling the invention claimed in the patent for a period of seventeen years.

The Patent Laws were enacted for the benefit of the inventor to give him protection for the features of his invention which are patentable. These features must be properly and concisely set forth and claimed in a formal application for patent, in order to comply with the requirements of the Patent Laws. For that reason, unless the inventor is familiar with patent matters, he should engage a competent registered patent attorney or agent to represent him. We are registered to practice before the U. S. Patent Office and are prepared to serve you in the handling of your patent matters.

A specially prepared booklet entitled "Patent Guide for the Inventor", containing detailed information with respect to patent protection and procedure, together with a "Record of Invention" form will be promptly forwarded to you without obligation upon request.

CLARENCE A. O'BRIEN & HARVEY JACOBSON

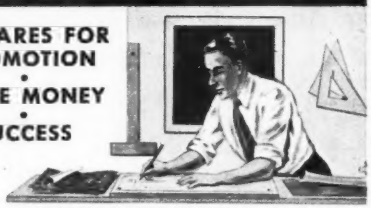
Registered Patent Attorneys

23-K DISTRICT NATIONAL BUILDING

WASHINGTON 5, D. C.

C. T. C. TRAINING IN
DRAFTING

PREPARES FOR PROMOTION
•
MORE MONEY
•
SUCCESS



"Here I am at work making good money as a draftsman. I'm glad I sent the coupon to Chicago Tech for that Free Trial Lesson and found out how easy it is to learn Drafting in spare time at home. Today, I feel secure in my job. What's more, I feel I'm slated for promotion and more pay."

LEARN IN SPARE TIME—AT HOME!
(or at the College in Chicago)

A few hours of pleasant home study every week—that's all. All the tools you need; drawing outfit included. This tested method—developed over 48 years of C.T.C. progress—prepares men quickly for good positions in industry.

FREE TRIAL LESSON

FREE INFORMATION — SEND COUPON

To prove to you how easy it is to learn Drafting at home, we will send you this FREE TRIAL LESSON. Mail coupon or send post card today.

CHICAGO TECHNICAL COLLEGE

N-276 Tech Bldg., 2000 S. Michigan Ave., Chicago 16, Illinois
Mail me FREE Lesson with information about big opportunities in DRAFTING.

Name..... Age.....

Address .....

City..... Zone..... State.....

INVENTORS

Your first step—if you consider your invention to be something of importance—is to have a search made of pertinent, prior U. S. patents. If our search report indicates probable patentability of your invention, you may apply for a patent which gives you the right to exclude others from making, using or selling your invention as claimed for a term of 17 years.

This firm is registered to practice before the U. S. Patent Office and is available to assist in the preparation of the necessary drawings, specification and claims.

Ask for a copy of our instructive booklet "Patent Protection for Inventors" and our convenient "Evidence of Invention" form. No obligation.

VICTOR J. EVANS & Co. Merlin M. Evans
REGISTERED PATENT ATTORNEY
750-L MERLIN BUILDING, WASHINGTON 6, D. C.

Invention Clinic

[*Continued from page* 20]

over unwanted areas.

The average stamped-square or ring-style sprinkler cannot be regulated and the area of coverage is likely to be small. So unless changed greatly, the design will not lend itself to a quick solution.

Most modern oscillating sprinklers are operated by water motors which through gears and links convert the rotary movement to an oscillatory one. The time required for each degree of arc change is constant while the area over which water is being distributed is contracting and expanding. Hence the same amount of water per second is delivered over a much larger area near the extremes of the motion. A simple cam or an automatically variable linkage to speed movement near the vertical and slow it down as it approaches the horizontal would correct unequal distribution in a jiffy. Why hasn't this been done? I don't have the answer.

The traveling type of sprinkler generally is a rotary which uses a water motor to operate two-toothed wheels. It gives good coverage except at the ends where there is no compensation. In some patterns, the garden hose serves as the guide and is straddled by a grooved wheel, in another a stainless cable is pegged down to the ground at one end and the motor operates the takeup reel.

While this matter of uniformity of water distribution is considered important by the

[*Continued on page* 26]

PATENTS
C. A. SNOW & CO.
REGISTERED PATENT ATTORNEYS
WRITE FOR INFORMATION TO
427 SNOW BUILDING, WASHINGTON 1, D. C.

INVENTORS
Whether an invention is patentable can be substantially determined by a search of the U. S. Patent records. Without obligation, write for information explaining the steps you should take to secure a patent.

JOHN N. RANDOLPH
Registered Patent Attorney
209 Columbian Building Washington 1, D. C.

INVENTORS
Send for PATENT INFORMATION Book and INVENTOR'S RECORD without obligation
GUSTAVE MILLER
102MI Warner Building
Washington 4, D.C.
REGISTERED PATENT ATTORNEY
Patent Attorney & Adviser U.S. NAVY DEPT. 1938-1947
ASSOCIATE EXAMINER U. S. PAT. OFF. 1922-1929
PATENT LAWYER

INVENTORS

If you believe that you have an invention, you should find out how to protect it. The first step is to have a search made of the prior pertinent U. S. patents. If a report on this search indicates that the invention appears patentable you can apply for a patent, and the specifications and claims should be prepared.

The firm of McMorrow, Berman & Davidson, with offices in Washington, D. C., is qualified to take the necessary steps for you. We can make a preliminary search on your invention, advise you whether we think it can be patented, and prepare your application for patent.

Unless you are fully familiar with the U. S. Patent Laws, we recommend that you engage the services of a Registered Patent Attorney to protect your interests. The patent laws are *your* laws. A patent gives you the right to prevent others from making, using or selling the invention claimed in your patent for a period of 17 years.

Use these patent laws for your protection. Investigate whether your invention can be patented. If you have what you believe to be an invention, we suggest that you have this firm make a search for you.

Send for a copy of our Patent Booklet entitled "How To Protect Your Invention," containing information about patent protection and patent procedure. Along with this we will also send you an "Invention Record" form, for your use in writing down and sketching details of your invention. We will mail them promptly. No obligation. They are yours for the asking.

McMORROW, BERMAN & DAVIDSON

Registered Patent Attorneys

PATENTS • COPYRIGHTS • PATENTS

139-B VICTOR BUILDING, WASHINGTON 1, D. C.

Dear Editor

Use this letters column as you see fit—make it a complaint box, question box, suggestion box or even a soap box. But use it! Our only requirement is that you sign your name and keep 'em short, interesting and clean. Address mail to: MECHANIX ILLUSTRATED, Letters Editor, 67 West 44th Street, New York 36, N. Y.

Smiling Mercury

We as a family agreed with Tom McCahill that the front end of the 1952 Mercury looked like a gaping mouth. So we improved it with a few strips. What do you think?

Wayne, Arthur, Mary, Bruce Eldredge
Mystic, Conn.

Well, nobody can call it toothless, anyway.

Car Of Contentment, Model?

I believe the Briscoe in your August Dear Editor is a 1917 model.

Files Crenshaw
Montgomery, Ala.

It's a 1914-1915 model.

Louis F. Lowden
Haddenfield, N. Y.

It's a 1918 model. My father owned one.

David W. Chute
Port Washington, N. Y.

It would appear from the illustration that the car shown has two headlights and the first car of this manufacture having two headlights was made in 1916.

Harold S. Burt
Examiner of Public Records
Connecticut State Library

Well, that places it between 1916 and 1921, the last date of manufacture. Majority of mail insists that 1918 is correct, so until authoritative word from Mr. Briscoe himself comes in, 1918 it'll have to be.

Dept. Of Unneeded Inventions

In your July Dear Editor, Basil McCormick wanted some crackpot inventor to invent a portable hole in the ground.

Let's ask for something more reasonable. How about a lightning-bug muzzle to keep the vicious creatures from biting?

Sammy Murphy
Lexington, Tex.

Fine, but why discriminate against mosquitoes?

Monsieur McCahill

This drawing represents Uncle Tom because of his attitude toward foreign cars. Why doesn't he knock off this overboard attitude toward screwy-looking sports cars. The boys

here are thinking of pooling some dough to export this bald Casanova to Europe.

Al Merino, Jr.
South Gate, Calif.

[*Continued on page* 31]

MEN—WOMEN!

Paint it with Suede!

SPRAY ON RAINBOW COLORS

for PROFIT and Pleasure...

FLOK KRAFT

A SENSATIONAL NEW HOME BUSINESS!!
A NEW INDUSTRY . . . A NEW MIRACLE FINISH!!
MAKE $500 to $1000 PER HOUR and more!

Flok-Kraft Covers:
Fabric, Metal, Glass, Plaster, Wood, Plastic or—*any surface!*

PROFESSIONAL SECRETS CAN BE YOURS

At last the carefully guarded secrets of this amazing miracle finish can be yours. Huge profits are waiting to be tapped in this tremendous new field. Flok-Kraft gives a velvety, luxurious surface to radios, lamps, toys, signs, store displays, figurines, auto dash boards—actually a thousand and one items to be seen on every hand can easily and quickly be beautified, enriched, increased in value with Flok-Kraft. Make old objects beautiful and saleable. Make new things worth more with this soft, rich covering that can be applied to any surface, even if old and worn.

YOU CAN LEARN IN A FEW DAYS

Yes, you can learn in a few days to start making money—big money! Make to $5.00—yes! even $10.00 *and more* per hour. Everything you need is furnished, including fully detailed instructions that are *complete* and easy to understand. Every point is explained to show you how to start on the road to big money, full or spare time.

WE FURNISH EVERYTHING YOU NEED TO START

In addition to the full step-by-step instructions you get a complete set of materials and equipment that enables you to start at once. A few cents worth of materials can mean many dollars in returns to you. You can make big profits, spare or full time—add to your income from your regular job or begin to build your own successful future with a full time business of your own and do it all right in your own home! A corner of your basement, garage, service porch, kitchen or living-room is all the space you need to start.

GRASP THIS LIFETIME OPPORTUNITY TODAY

This is one too good to miss. Fill out the coupon below and mail it today for full free details. I'll arrange to send you the complete outfit—everything you need to start—for leisurely, no-risk examination right in your own home. You owe it to yourself to investigate. Write now for full, free details, samples, etc. Fill out and mail the coupon below. Do it today! Everything I send you is FREE.

Read What Others Say About Flok-Kraft

"Received the flok-kraft outfit and everyone that saw it is very enthused. I only had it about thirty minutes and got an order for a hundred dollar job." Mr. C. H. Maryland.

". . . I have received my order of Flok and Adhesives and believe me, I'm very pleased and happy as I've made myself MORE than the cost of my supplies already, and I've still got more jobs to do." Cpl. G. W., S. Carolina

"Got $52.50 for those 7 trunk interiors for about 4 hours work. $7.50 per trunk." J. O., Mo.

". . . pleased with your course and I'm being swamped with work to do." W. F.,

YOURS TO EXAMINE WITHOUT RISK!!

Examine in your own home—then decide. The complete instructions, the full starting kit of materials and equipment and full details on how you can open your own business, spare or full time—EVERYTHING will be sent you to EXAMINE AT OUR RISK!

FLOK-KRAFT and DEFENSE

This amazing miracle finish is of inestimable value for use on hundreds of defense products. Flok-Kraft offers you a way to big, extra money, assisting manufacturers in many lines as well as filling a big demand on the home front.

Coast Industries, Dept. 3A
1004 Los Angeles St., Los Angeles 15, Calif.

SEND NO MONEY—MAIL COUPON NOW!

COAST INDUSTRIES, Dept. 3A
1004 S. Los Angeles St., Los Angeles 15, California

Gentlemen:
Please rush me FREE details, sample, etc., I understand that everything you send is free and that I'll be under no obligation now or ever.

NAME_____
STREET_____
CITY_____ STATE_____

GROW Living MIDGET TREES!

EARN $10.00 PER HOUR!

•AT HOME
•IN SPARE TIME
•NO EXPERIENCE NEEDED

It's new! Amazing! At last, the secret of growing miniature (MING) trees can be yours. FULL GROWN, dwarf trees — only a few inches high. Beautiful miniature fir, orange, oak, Chinese elm, peach, pine, cypress—any kind! ALL BLOOM and even BEAR FRUIT. All perfect healthy specimens—but miniature in size! Make costly home decorations and expensive centerpieces. (SOLD FOR OVER $1,500 EACH) Big demand. Costs only pennies—takes only minutes per week. IT'S EASY! Fun! A new fascinating hobby—a new fabulous $$$$ business. Send for free secret plan details and real seed.

HELP US FILL HUGE DEMAND!

These trees are being demanded by STORES CLUBS • HOTELS • FLORISTS • HOUSEWIVES • INTERIOR DECORATORS • COLLECTORS • HOBBYISTS — A Big Money Opportunity FOR YOU.

FREE! GENUINE SEED AND PLAN!

NATIONAL NURSERY GARDENS Dept. T10
8463 So. Van Ness,
Inglewood 4, California
Rush me FREE plan and seed IMMEDIATELY!
Name
Address Zone
City State

WALKIE TALKIES! — $4.99 COMPLETE SET OF 2

POCKET SIZE

—ELECTRONIC VOICE POWERED

No tubes, batteries, adjustments. Guaranteed to work anywhere up to ¼ mile with extra wire. Swell for room to room—garage to house, etc. Your own private, talk-listen phone. Not war surplus. Brand new. Guaranteed. Two complete units with interconnecting wire—READY TO USE!

SEND $1.00 deposit and pay postman $3.99 plus postage charges or send $4.99 for postpaid delivery. Available only by mail from

MIDWAY CO. Dept. WMI-10 Kearney, Nebraska

INVENTORS

IF YOU WISH TO PROTECT YOUR INVENTION

YOU SHOULD TAKE STEPS TO PROTECT IT BY A U.S. PATENT

WRITE ME FOR "INVENTION RECORD" FORM

CARL MILLER
REGISTERED PATENT ATTORNEY

WOOLWORTH BLDG., 35th FLOOR, 102B
NEW YORK CITY

Invention Clinic

[*Continued from page* 22]

consumer, there scarcely is any plot of land where absorption of water is constant. The amount of sand, humus, grade, compacting and even the different growths on the land have a pronounced effect on the amount of water which will be absorbed. However, the purchasing public is more scientifically minded today. It has had much experience with sprinklers and is aware of the defects. So equal distribution becomes a good sales point.

Patenting Sprinkler Inventions

Don't imagine that every new sprinkler is easy to patent. There already are many hundreds in the files of the Patent Office. And there is no list of manufacturers anxious to undertake the production and sale of a new design. On the other hand, the public will purchase nearly any article in this field which will do a good job and is reasonably priced.

There is a considerable range in price. Commercial rotary sprinklers run from $2 to $10; oscillators vary from the latter figure to $45. It will be well for the inventor to consider the popular levels when designing a product for a competitive market.

The following procedure is advised: let price decide if you should build your model first or after you have instructed your attorney to have a search made to determine if you have anything patentable. In either case make the model or have it made and test it thoroughly.

Then plan for production and distribution of the article. A few thousand dollars can get you started in the production which may be kept within bounds while sales develop. In any event, getting started will be a long, hard pull.

[*Continued on page* 37]

INVENTORS

Before you make any effort to market your invention, you should take the first steps toward proceeding for patent protection.

I shall be pleased to furnish you with information relative to patent procedure upon request from you, and this will be without any obligation on your part.

PATRICK D. BEAVERS
Registered Patent Attorney
923 Columbian Building Washington 1, D. C.

FREE!

COURSE of INSTRUCTIONS

SOME OF THE BOOKS AND LESSONS WAITING FOR YOU!

Yes, we'll teach you at home how to make the most beautiful things you have ever seen! Everything from novelties, gadgets, beautiful jewelry, gems, machine parts, lures, models . . . ALL without tools or machinery! The PLASTICAST PROCESS is as *easy as pouring water out of a glass!* Learn how to MANUFACTURE countless useful and attractive things with Liquid Plastics, Liquid Marble, Liquid Ivory, Liquid Glass, Liquid Clay, Plaster, Stone, Wood, Metal and Compositions . . . all taught to you FREE!

SUCCESS GUARANTEED

The ONLY limitation is your imagination! No special talent, no previous experience, no special tools or machinery required! We not only TEACH you how to make these things but we show you how easy it is to dispose of your production, even selling part or all of your output to us! We will actually PUT YOU IN BUSINESS OVERNIGHT AND GUARANTEE YOUR SUCCESS! Yes, we'll set you up in the most fascinating business you ever dreamed of! In just a short time you'll be manufacturing sensational products of endless variety . . . it's all very fascinating and simple!

HOW TO START

Just send 25c for our big 56 page catalog which elaborates on the PLASTICAST PROCESS; we will include your first book of instructions PLUS complete details of the most amazing offer that will ever come your way! Do it today . . . don't delay anything that can be so important to your future!

IN BUSINESS OVERNIGHT! SUCCESS GUARANTEED!

Illustrated at the left are just a few of the THOUSANDS of useful and attractive things we teach you how to make without any tools or machinery . . . simply by CASTING!

You can start your own HOBBY AND NOVELTY SHOP in your own community. We will actually put you in business, supply you with ALL the merchandise you need and GUARANTEE YOUR SUCCESS!

Or you can start your own PLASTICS FACTORY and manufacture an ENDLESS VARIETY of beautiful and useful things for others to sell! Either way, we supply all the materials and instructions!

SEND 25c FOR FULL PARTICULARS AND BIG CATALOG!

We have THOUSANDS of unusual products and materials of immense interest and value to inventors, mold, die, tool and model makers, hobbyists, craftsmen and to every ambitious individual seeking to create wealth and security with his own two hands in a FASCINATING ENTERPRISE!

PLASTICAST CO. WRITE TO NEAREST OFFICE

Dept. H

P.O. Box 6737, Chicago 80, Ill.

P.O. Box 987 Palo Alto, Calif.

Canadian readers: Please send 35c to: Canadian Ind. Plastics, 1056½ W. Pender St., Vancouver, B.C.

LEATHERCRAFT THE "HE-MAN" HOBBY

Make Leather Items for Gifts, to Sell, or for Your Own Use

Get started now. LARSON Beginners' Kits of ready-cut projects require no tools or experience. Free instructions included. Make belts, gloves, moccasins, billfolds, woolskin animals and mittens, other attractive leather items. Also America's most complete stock for advanced hobbyists and professional craftsmen. SEND 10c TODAY for big illustrated catalog.

J. C. LARSON CO., 820 So. Tripp Ave. Dept. 2028, CHICAGO 24, ILLINOIS

Tells How You Can Learn to MOUNT BIRDS!

Learn At Home

Men, Boys, Hunters, Fishermen, mount and save your lovely wild-game trophies. Be a Taxidermist. Mount Birds, Animals, Heads, Fish, Tan skins. YOU learn easily, quickly in spare time. Have a grand home-museum. The finest and the greatest hobby known, for sportsmen. Fun, real profits.

FREE BOOK Yes, FREE. Beautiful strange, valuable Book, telling all about Taxidermy. Contains over 100 beautiful game-pictures. And it's yours FREE, if you rush your request. You can mount all kinds of wild-game, and common specimens too. We can positively TEACH YOU. So GRASP this opportunity. RUSH letter or postal for this amazing FREE BOOK. Don't delay. State your AGE.

N. W. SCHOOL OF TAXIDERMY, 2410 Elwood Bldg., Omaha 2, Neb.

GET THIS FREE BOOK!

Choose as Your College Career

Electrical Engineering

- **Major in Electronics or Power**
- **B. S. Degree in 36 months**
- **Technicians Certificate: 12 mo.**

By 1954 there will be *at least* two positions for every engineering graduate. Enter these opportunities early...earn your B.S. degree in 36 months through optional year 'round study.

FOLLOW THIS PLAN — *Become a Radio Technician in 12 months.* In 6 additional months become a *Radio-Television Technician.* These Technician Courses are complete in themselves but can be applied as *one-third* of the B. S. degree program.

Four terms annually: Oct., Jan., April, July

MILWAUKEE
SCHOOL OF ENGINEERING
Non-Profit • Founded in 1903

MILWAUKEE SCHOOL OF ENGINEERING
Dept. MI-1052, 1025 N. Milwaukee, Milwaukee, Wisconsin

Without obligation send **Catalog** for Electrical Engineering, B.S. Degree, major in ☐ Electronics; ☐ Power; ☐ **"Your Career"**; Occupational Guidance **Bulletin** on: ☐ Mechanical Engineering, B.S. Degree ☐ Radio-TV ☐ Electrical Power ☐ Welding ☐ Heating, Refrigeration, Air Conditioning. ☐ Preparatory.

Name..... Age.....

Address .....

City..... Zone..... State.....

If veteran, indicate date of discharge.....

NOW READY!

First Underslung Miniature Model—Ready to Build!

1914 REGAL Colonial Coupe Collectors' Model KIT—$3.95

September issue of Mechanix Illustrated carried the fascinating story of this celebrated antique auto—and now YOU CAN BUILD YOURS from our authentic scale model kits! When complete—measures 8½" in length! It's the first underslung model kit ever made! All die-cut parts are of the finest materials—with die-cast plastic radiator, die-cut metal hood with louvre detail. History of car, including step-by-step instructions included. Order now for yourself, or as a gift for every hobbyist on your Christmas list!

• *CHOICE of 17 Famous Antique Auto Kits —in addition to this one—*

FREE! Write for a Copy of Our 4-Color Folder!

Priced—$1.95 to $3.95

IF YOU ORDER DIRECT—add 25c for postage and handling.

hudson miniatures **OLD TIMERS**
"Originators of Antique Autos in Miniature"
SCRANTON HOBBY CENTER, Dept. 2 Scranton 10, Pa.

SAVE ON TIRES

Firestone GOODRICH GOODYEAR U.S. & OTHERS—SLIGHTLY USED

10% OFF TO ALL—THIS MONTH
FREE TUBE WITH EACH TIRE!

FOR RUSH SHIPMENT — send Check or Money Order . . . We ship all over the world.

FINEST GRADE, 26 MONTHS GOLDEN RULE GUARANTEE BOND
THIS GRADE MADE THE BELMONT NAME "WORLD FAMOUS"

TRUCK TIRES (8-10-12-14 PLY)							
600-16	$5.39	LO-PRESSURE		700-15 (6)	$10.99	700-20	$12.29
600-16 (6)	6.49	550-15	$5.59	750-16 (8)	10.89	750-20 (8)	14.19
650-16	5.59	640-15	5.59	700-17	11.99	750-20 (10)	17.99
650-16 (6)	7.29	670-15	5.79	750-17	12.99	825-20	20.49
700-16	7.19	710-15	6.39	750-15	21.69	900-20	19.29
750-16	7.79	760-15	6.59	825-15	23.79	1000-20	19.89
525-18	6.89	800-15	7.29	600-20	9.89	1100-20	22.89
550-17	5.59	820-15	7.29	650-20	11.49	1200-20	39.99
650-15	5.39	670-16	6.39	32x6 (8)	11.89	1000-22	22.89
700-15	5.39	760-16	7.29	32x6 (10)	12.19	1100-22	22.89
WHITEWALLS $2 ea. EXTRA							

Buy THE "Right" TRUCK TIRES	Std. Guar. 16 Mos.		Rugged Guar. 30 Mos.	
	MILITARY MUD-SNO TREAD			
For "Your" Job	750-20 Std.	$10.00	750-20 Rg.	$16.64
8-10-12-14 Ply	600-16 Std.	6.75	600-16 Rg.	9.95
DEPEND ON US	900-16 Std.	10.00	900-16 Rg.	16.00

BELMONT COR. 11TH & SPRING GARDEN STS. (Dept. MI-2) PHILADELPHIA, PA.

IMPORT PAYS BIG

20 LESSON COURSE SENT FOR NO-RISK EXAMINATION

Opportunity to START AT ONCE IMPORTING big profit items for your own world-wide import-export business by mail order without capital, from home, anywhere; or work for others—profits unlimited, travel abroad if desired. No previous experience needed. Men, women...learn at home in spare time from established World Trader, easy step-by-step method. FREE details—write NOW! Airmail reaches us overnight. MELLINGER CO., Suite 26A 1717 Westwood, Los Angeles 24.

Learn Profitable Profession in 90 days at Home

MEN AND WOMEN, 18 TO 60

Swedish Massage graduates make big money working full or spare time with doctors or in hospitals, health resorts, sanatoriums, clubs, private practice. A dignified, interesting career! Qualify for your graduation certificate. Thorough instruction at home as in class rooms. Write for Illustrated Book—FREE!

THE COLLEGE OF SWEDISH MASSAGE
Dept. 258M, 41 E. Pearson, Chicago 11

Bar Bells

Buy Direct From Factory
Write for free booklet and price list

$8.95 up

INDEPENDENT IRON WORKS
2416 East 23rd Street, Dept. X3
Los Angeles 58, Calif.

Develop Hidden Earning Power

STUDY LAW

at home! LL.B. Degree

Qualify yourself in spare time for advancement, greater earnings, business success. Now, more than ever, legal ability is in demand! Easy-to-understand step-by-step lessons and text material furnished—invaluable for permanent reference. Over 40 years expert teaching. 114,000 students enrolled. Easy payments. Find out now, at no cost, how study of law can help you. Write today for FREE Book "Law and Executive Guidance."

AMERICAN EXTENSION SCHOOL OF LAW
Dept. X-55, 646 N. Michigan Ave., Chicago, Ill.

WOULDN'T TAKE $1000 FOR COURSE

"The lessons are so simple that anyone can understand them. I have learned to play by note in a little more than a month. I wouldn't take a thousand dollars for my course." * S. E. A., Kansas City, Mo.

PLAYS ON RADIO

"I can't keep from telling you that I have a good position playing from KTHS, Hot Springs, Ark., every morning." * J. S., Okla.

PLAYS AT DANCES

"The Piano course I'm taking is the 3rd course with your school. Previously I took Saxophone and Clarinet. Since then I've played a lot of dance jobs." * E. A., Lake View, Iowa

THOUSANDS NOW PLAY

who never thought they could!

You, too, can play any instrument by this EASY A-B-C METHOD

YOU think it's difficult to learn music? That's what thousands of others have thought! Just like you, they longed to play some instrument. But they denied themselves the pleasure—because they thought it took months and years of tedious study to learn.

And then they made an amazing discovery! They learned about a wonderful way to learn music at home—without a private teacher—without tedious study—and in a surprisingly short time. They wrote to the U. S. School of Music about this remarkable short cut method. A free print and picture sample actually showed them how easy it was to learn.

The result? Over 850,000 people have studied music at home this simple, A-B-C way. They have found the key to good times, popularity and profit.

And that's what you can do right now. Simply mail the coupon. Get the proof that you, too, can learn to play your favorite instrument—quickly, easily, in spare time at home. Just read the fascinating illustrated booklet—examine the print and picture sample. Tear out the coupon now, before you turn the page. Instruments supplied when needed, cash or credit. U. S. School of Music, Studio B2210, Port Washington, N. Y. 54th year. (Established 1898.)

** Actual names on request. Pictures by professional models.*

FREE! *Print and Picture Sample*

U. S. School of Music, Studio B2210,
Port Washington, N. Y.

Send me FREE BOOK and FREE Lesson-Sample. No obligation—and no salesman is to call upon me. I'm interested in playing (name instrument) _____

☐ I do ☐ I do not have instrument now.

Name _____ (please print)

Address _____

City _____ State _____

Please state zone No. (if any)

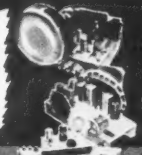
AMAZING NEW TRAINING PLAN

I PREPARE YOU AT HOME FOR BIG PAY JOBS IN

TELEVISION RADIO ELECTRONICS

WITHIN MONTHS!

L. C. Lane, B.S., M.A. Pres. RTTA & Pierce Schools



YOU BUILD AND KEEP BIG SCREEN TV RECEIVER

EXTRA FEATURES THAT MEAN MORE MONEY FOR YOU!

Thousands of new job opportunities will be available for you right in your own state, with the lifting of government restrictions on new TV stations. My simple, successful methods can PREPARE YOU NOW to take your place in America's booming TELEVISION and Electronics industries — where you get the success and happiness that you always wanted out of life. You learn the practical easy way by using actual parts and equipment. Then after you finish your training for a position as a full-fledged TV Technician — where you can write your own ticket and choose from dozens of fascinating careers — I don't stop there! I continue to train you — AT NO EXTRA COST — to qualify for even better pay in the BETTER JOBS that demand FCC license, with my . . .

AT NO EXTRA COST! YOU GET A ROUND TRIP TO NEW YORK CITY

FROM ANYWHERE IN THE U.S. OR CANADA—I pay your way to New York and return. PLUS 2 FREE weeks, 50 hours of advanced instruction and shop training at the PIERCE SCHOOL OF RADIO & TELEVISION. You use modern electronics equipment, including student-operated TV and Radio stations. You go behind the scenes of New York's big Radio-TV centers, to study first hand. And I give you all this AT NO EXTRA COST! (Applies to complete Radio-TV course only.)

PLUS . . . all illustrated units including Super-Het Radio Receiver, R.F. Signal Generator, Combination Voltmeter-Ammeter-Ohmmeter, C-W Telephone Receiver, AC-DC Power Supply. Everything furnished including all tubes, and big TV tube.

FREE FCC COACHING COURSE

- PREPARES YOU AT HOME FOR YOUR FCC LICENSE
- THE BEST JOBS IN TV AND RADIO REQUIRE AN FCC LICENSE

Given to every student at NO EXTRA COST after TV Theory and Practice is completed.

NOW! Advanced FM-TV Training For Men Who Know Radio

Prepares You For Higher Pay Jobs in A Few Months

COMPLETE theory and practical training course . . . complete with kits including large screen TV receiver.

FCC License Coaching Course Included FREE.

VETERANS!

If eligible under new G.I. Bill (discharged after June 27, 1950) — CHECK COUPON BELOW!

EARN EXTRA MONEY IN SPARE TIME

Make as much as $25.00 a week in your spare time while learning — repairing Radio-TV sets. Many of my students pay for their entire training from spare time earnings almost from the very beginning . . . start their own service business.

FREE JOB PLACEMENT SERVICE

MAIL COUPON TODAY

NO SALESMAN WILL CALL

RADIO-TELEVISION TRAINING ASSOCIATION

1629 Broadway, Radio City Station, New York 19, N. Y.

Approved as a Correspondence School under the laws of the State of New York

BOTH FREE! Send for my illustrated booklet and trial lesson

Mr. Leonard C. Lane, President
RADIO-TELEVISION TRAINING ASSOCIATION Dept. B-10
1629 Broadway, New York 19, N. Y.

Dear Mr. Lane: Mail me your NEW FREE BOOK and SAMPLE LESSON that will show me how I can make BIG MONEY in TELEVISION. I understand no salesman will call.

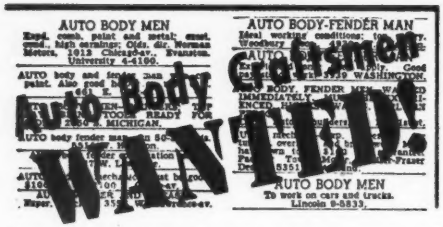
NAME _____ Age ____

ADDRESS _____

CITY _____ ZONE ____ STATE _____

I am interested in: ☐ Radio-TV ☐ Advanced TV-FM

VETERANS! If qualified under G.I. Bill, check here ☐



Learn This Craft–Earn Big Money

Look at the Help Wanted ads in your paper. The billion-dollar auto repair trade needs trained men NOW! The demand is big . . . pay is big . . . opportunities are great. You have a chance to grow with this growing trade, perhaps set up **your own profitable shop.**

CASH IN ON YOUR SPARE TIME!

You can begin your Auto Body & Fender Training at home in spare time with the **proven** UEI plan. You learn about appearance reconditioning, metalwork, painting, welding, other practical phases without leaving your present job. Then get actual practice in our large, well-equipped shops, repairing wrecked cars under the guidance of skilled instructors. Get FREE book and all the facts by sending coupon NOW!

UTILITIES ENGINEERING INSTITUTE 2523 Sheffield Ave., Dept. XJ-18, Auto-Crafts Div. Chicago 14, Ill.

MAIL TODAY FOR FREE FACTS

UEI has been training men for industry since 1927.

Auto-Crafts Div.
UTILITIES ENGINEERING INSTITUTE
2523 Sheffield Ave., Dept. XJ-18, Chicago 14, Ill.
YES! Rush FREE Book and full facts on Auto Body & Fender Repair Training.

Name ..... Age .....
Address .....
City ..... Zone or County ..... State .....
[ ] Check for special information if under 17.

ONE BUSINESS THAT IS NOT EFFECTED by STRIKES, DEPRESSIONS OR POLITICS

OWN BUSINESS WITH A POTENTIAL MARKET OF 50,000,000 CUSTOMERS

New shop-method, home-training system gives you electrical know-how that used to take years to learn. Learn at home by building valuable testing kits, repairing your own and neighbors' appliances. It is not unusual for appliance repairmen to charge on the basis of $5.00-$6.00 an hour.

FREE ILLUSTRATED BOOK

Shows you how you learn every phase of electrical appliance. How to make money while you learn. Write today for your FREE copy.

CHRISTY TRADES SCHOOL
Dept. D-1006
4432 North Kedzie Ave., Chicago 25

MAKE CRIME YOUR BUSINESS

ON THE SIDE OF THE LAW!

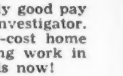
Help fight crime! . . . Earn steady good pay as a Finger Print Expert or Investigator. I.A.S. trains you—by easy, low-cost home study lessons. Learn this exciting work in spare time. Write for full details now!

OVER 800 POLICE BUREAUS...

Employ I.A.S.-trained men . . . proof of what I.A.S. can do. Write today (state age) for details. No obligation. No salesmen will call.

INSTITUTE OF APPLIED SCIENCE
Dept. 2357 1920 Sunnyside Avenue
Chicago 40, Illinois

LAW FREE BOOK



Your **FREE** copy of **"The Law-Trained Man"** shows how to gain prestige and greater earnings through Blackstone home law study. All instruction material furnished including 16-volume Law Library written by 65 well-known law authorities. Lawyers, judges among our graduates. LL.B. degree. Low cost; easy terms. Write today.

BLACKSTONE COLLEGE OF LAW 225 N. Michigan Ave. Dept. 67, Chicago 1, Ill.
A Correspondence Institution Founded in 1890

Dear Editor—

[*Continued from page* 24]

August Mystery Solved

I think this will answer Wally Loeb's MI Monthly Mystery in the August Dear Editor.

Since each man paid $10 at the start, the total investment was $30. Then, each received $1 back, making the total investment $27. Now, instead of adding the $2 kept by the bellboy (which is an illogical thing to do), subtract it from the total investment—resulting in $25, the true cost of the room.

For a check—add the $25 cost of the room, the $3 refund and the $2 kept by the bellboy. The total is $30, the original investment.

Solved?

Jack M. Turnquist
Illinois Wesleyan U.
Bloomington, Ind.

I've got it. Two of the men went back to the same hotel for the same room and paid $15 each. This time when the clerk sent back $5, the bellboy kept $3 and gave each man $1. To sum up, each man paid $14, making a total of $28. Add to this the bellboy's $3 and you have $31. There's your dollar. Satisfied?

Kay S. Bensen
Richmond, Utah

Well, not quite. We think, though, that the hundreds of readers who sent in their solutions will be satisfied with Mr. Turnquist's answer. Practically everybody had it right—it was just a problem of semantics.

New Classic Car Address

In the August Dear Editor column there was a letter telling about the Classic Car Club of America. Since the letter was written, there have been elections in the club and some changes made. Therefore, the correct address from which to get information is now: Edward C. Kavenagh, Arrow Steamship Co., 2 Broadway, New York 4, N. Y.

It might be a good idea if all persons who answered the previous letter would contact me to insure that I have the proper records.

Edward C. Kavenagh, Secretary
Classic Car Club of America

[*Continued on page* 33]

NEW BODIES FOR OLD!

I've Made New Men Out of Thousands of Other Fellows...

"Here's what I did for THOMAS MANFRE...and what I can do for you!"
—*Charles Atlas*

GIVE me a pepless, second-rate body—and I'll cram it so full of handsome new muscle that your friends will grow bug-eyed! . . . I'll wake up that sleeping energy of yours and make it hum like a high-powered motor! Man, you'll **feel** and **look** different! You'll begin to **LIVE!**

Let Me Make YOU a NEW MAN —IN JUST 15 MINUTES A DAY

YOU wouldn't believe it, but I myself used to be a 97-lb. weakling. Fellows called me "Skinny." Girls made fun of me behind my back.

THEN I discovered my marvelous new muscle-building system—"**Dynamic Tension.**" It turned me into such a specimen of MANHOOD that today I hold the title "THE WORLD'S MOST PERFECTLY DEVELOPED MAN."

What is "Dynamic Tension"?

When you look in the mirror and see a healthy, husky fellow smiling back at you—then you'll realize how fast "**Dynamic Tension**" GETS RESULTS!

"**Dynamic Tension**" is the easy, NATURAL method you can practice in your own room—JUST 15 MINUTES A DAY—while your chest and shoulder muscles begin to swell . . . those arms and legs of yours bulge . . . and your whole body starts to feel "alive," full of zip and go!

FREE My 32-Page Illustrated Book is Yours —Not $1 or 10c—But FREE

Send NOW for my famous book "Everlasting Health and Strength." 32 pages, packed with photographs, valuable advice, answers many vital questions. This book is a **real prize** for any fellow. Yet I'll send you a copy absolutely FREE. Just glancing through it may change your life! Rush coupon to me personally: **Charles Atlas, Dept. 6X, 115 East 23rd St., New York 10, N. Y.**

CHARLES ATLAS, Dept. 6X
115 East 23rd St., New York 10, N. Y.

Send me—absolutely FREE—a copy of your famous book, "Everlasting Health and Strength"—32 pages, crammed with photographs, answers to vital health questions, and valuable advice. I understand this book is mine to keep, and sending for it does not obligate me in any way.

Name..... Age....
(Please print or write plainly)
Address.....
City..... State.....

Send No Money—

4 BIG AUTO BOOKS

On Approval!

USED BY THE THOUSANDS IN AUTOMOTIVE TRAINING

Over 2700 Pages of How-To-Do-It-Facts 2000 Pictures

TO HELP YOU MAKE MORE MONEY

America is again in a period when its 43 million autos and 9 million trucks and busses must be kept in good repair. That means that men with know-how are in demand for *good* jobs at *high* pay. It means that the door of Big Opportunity is wide open.

The four big, thick books of auto facts are packed full of the exact information that will help you to hold a big paying job. They will enable you to do important work better and faster. Keep them handy for convenient reference.

All pages are written in an easy-to-understand manner by expert automotive engineers with many years of successful experience. To have these great books close at hand is like having these experts beside you, ready to answer questions. Send the coupon TODAY but send no money now.

AMERICAN TECHNICAL SOCIETY—Publishers Since 1898
Dept. A7320, Drexel Ave. at 58th St., Chicago 37, Ill.

I would like to examine your Four Big Auto Books. I will pay the delivery charges only, but if I choose I may return them express collect. If after 10 days' use I prefer to keep them, I will send you $3 plus postage and pay the balance at the rate of only $4 a month until $18.50 has been paid.

Name .....

Address .....

City ..... State .....

Please attach letter giving employer's name and address (if self-employed give business man reference). Men in service please give home address.

THIS 120-PAGE

GUIDE — *for*

AMBITIOUS MEN

FREE!

120 pages of guidance to best-paid positions. Up-to-the-minute information for men who want to climb to the top. Tells how to get promotion, security and better pay through home study courses. This handbook, "Engineering Opportunities," is free and entirely without obligation. Send the coupon. Make this your big year! Describes over ninety courses including:

Mechanical Eng.	Electrical	A.F.R.Ae.S.
Aeronautical	Radio	A.M.I.C.E.
Television	Automobile	B.S. (Pure Science)
Building	A.M.I.Mech.E.	

SEND COUPON TODAY

Canadian Institute of Science & Technology Limited, 548 Century Building, 412, 5th Street, N. W., Washington, D.C.

Please forward free of cost or obligation your handbook, "ENGINEERING OPPORTUNITIES".

Name .....

Address .....

Course interested in ..... Age .....

Canadian Address: Canadian Institute of Science
548 Garden Building, 263 Adelaide St. W., Toronto, Ont.

I Built My Modern New Home with EXTRA MONEY

Selling Stark Fruit Trees, Roses, Flowering Shrubs, Vines!

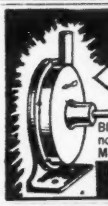
Exceptional Week's Earnings $1,122.15!

Merle Winters many years with Stark Bro's

Stark Dwarf Fruit Trees! Here is Stark's amazing new DWARF Fruit tree . . . colorful and ideal for the backyard home orchard!

If you really want to turn full time or spare hours into big money . . . follow the lead of Merle Winters who earned exceptional profit as high as $1,122.15 in a single week with Stark Bro's. This exceptional opportunity is wide open to any ambitious man or woman. Stark Bro's world famous exclusive U.S. Patented and Trade Marked fruit tree varieties are Super-Quality. Stark Bro's now help you cash in vast new-home market with Super-Quality flowering shrubs, roses, shade trees . . . everything to make the home beautiful. NO EXPERIENCE NEEDED. We show you how and supply Giant new SALES KIT FREE.

STARK BRO'S Nurseries & Orchards Co.
Desk 5003 Town of Louisiana, Missouri



PUMP WATER *FAST!*

DRAIN WASH TUBS, CELLARS, CISTERNS IRRIGATE—FILL TANKS—DRAW WELL WATER

Pumps 2800 GPH. 420 GPH at 75' High or 1600 GPH from 25' well. Sturdy, Rustproof Alloy Metal. Six Blade Impeller. Uses any 1/8 to 1/2 H.P. Motor. Will not leak or clog. Fits any garden hose. Immediate Money Back Guarantee. Send Check, M.O., or C.O.D.

8.95 IN U.S.

MOORE MANUFACTURING CO.
SWEDESBORO 3 NEW JERSEY

BATTERIES

START A FACTORY AT HOME

—and re-cast junk batteries into new, with and without new materials; the latest achievement. We supply complete instructions and everything needed. Large daily profits.

BATTERY LABORATORY SCHOOL
DEPT. MI, MINNEAPOLIS 4, MINNESOTA

STUDY AT HOME

WITH AN EDUCATIONAL INSTITUTION

Courses in ENGINEERING: Electrical; Civil; Mechanical; Drafting; Architectural; Automotive; Steam; Diesel; Aeronautical; Radio; Structural; Mining; Industrial; Petroleum; Marine; Refrigeration; Air Conditioning; Chemical.

Courses in ARTS AND SCIENCES: Philosophy; Education; Letters; Psychology; Public Health; Medical Jurisprudence; Sociology; Physics; Chemistry; Geology; Pol. Science; Theology; Law; Business and Commerce; Accounting; Mathematics; Statistics; Agriculture.

McKinley-Roosevelt Incorporated, 4610—D10 Sheridan Rd., Chicago 40, Illinois

NEW! SUCTION CELLAR DRAINER

Capacity 300 GALLONS per Hour!
No more hand-pumping or bailing of flooded basements when you have DRAINMASTER. Just connect to a handy faucet with garden hose, submerge in flood water, run another length of hose to open drain or out a window. DRAINMASTER does the rest. Solid brass, no moving parts to wear. Drains fish ponds, boats, swimming pools, trenches, tanks, etc. ORDER TODAY! Be prepared for flood emergency. **$3.95** *post paid*

Money-Back Guarantee

M. P. WHITE Co., Dept. 2-M, 55 Stuart St., Boston 16, Mass.

How To Hold

FALSE TEETH

More Firmly in Place

Do your false teeth annoy and embarrass by slipping, dropping or wobbling when you eat, laugh or talk? Just sprinkle a little FASTEETH on your plates. This alkaline (non-acid) powder holds false teeth more firmly and more comfortably. No gummy, gooey, pasty taste or feeling. Does not sour. Checks "plate odor" (denture breath). Get FASTEETH today at any drug store.

Dear Editor—

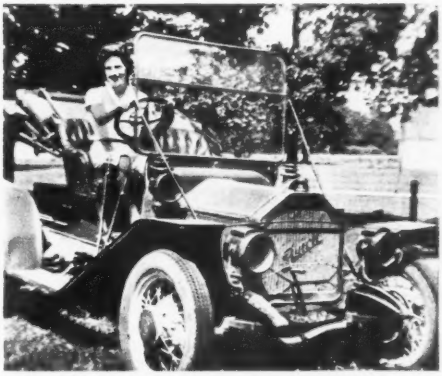
[*Continued from page* 31]

Oldtimers On The Road

Here's my Ford Model T, a collector's item because everything on it is as it was originally except for the four tires. The motor has never even had any repairs and even the mohair trim is spotless. I've been offered a $1,000 trade-in on a new Ford.

L. W. Barker
Oklahoma City, Okla.

Enclosed is my 1910 Buick, purchased by my grandfather in 1910. It cost $1,075.



T. P. Hessong
Indianapolis, Ind.

[*Continued on page* 35]

GET THE WORLD'S LEADING
TV & RADIO CATALOG

FREE

236 VALUE-PACKED PAGES

1953 ALLIED BUYING GUIDE

Save on Everything in TV & Radio!

Everything for Experimenters, Builders, Amateurs, Servicemen, Engineers and Soundmen

Get the big 236-page 1953 ALLIED Catalog featuring the world's largest selections of latest top-quality electronic equipment at lowest, money-saving prices. See the newest in TV, home radios, Amateur Equipment, Hi-Fidelity sound, P.A. systems, recorders, test instruments, builders' kits—plus thousands of parts, tubes, tools and books. Get more for your money from the World's Largest Radio Supply House. Send today for your FREE 1953 ALLIED Catalog!

FREE CATALOG

SEND FOR IT TODAY

ALLIED RADIO

ALLIED RADIO CORP., Dept. 6-X-2
833 W. Jackson Blvd., Chicago 7, Illinois
☐ Rush FREE 1953 ALLIED 236-Page Catalog

*Name*_____

*Address*_____

*City*_____ *Zone*____ *State*_____

CAR OWNERS SHOVE $10 BILLS IN YOUR POCKET

WHEN YOU SHOW THEM AMERICA'S GREATEST AUTO SEAT COVER VALUES

including

BAMBOO

NEWEST SEAT COVER SENSATION

BIG MONEY FULL OR SPARE TIME

Want extra money—**plenty of it** day after day? Then rush your name and address at once for Free Sample Outfit that will start you taking orders from car owners everywhere for Key expertly tailored Auto Seat Covers. EXCLUSIVE NEW PATTERNS to fit every make and model car. No one can compete with you, in wide choice, in quality—and in expert tailoring that makes covers fit like a pair of gloves—and when you quote prices that are only a fraction of what the customer expects to pay, brother! You make money hand over fist writing up the fast orders! Line includes nationally advertised sensations like BLACK EBONY Saran, beautiful BAMBOO, brilliant FIESTA, colorful BULL FIGHTER PLAIDS, plus many other exclusive patterns to choose from, all at unbelievably low prices.

Rush Name for FREE Outfit

Give MAKE, YEAR and MODEL of YOUR CAR

No experience needed. Make all the extra money you need easily just by **showing!** Every car owner a "hot" prospect. YEAR AROUND STEADY PROFITS. No investment to make. **Actual seat covers given to producers for OWN USE!** Write for Free Selling Kit valued at $2.00 and actual samples TODAY!

KEY PRODUCTS CORP., Dept. 2910
800 N. CLARK ST. CHICAGO 10, ILLINOIS

The NEW Model 50 UTILITY TESTER

FOR REPAIRING ALL ELECTRICAL APPLIANCES-MOTORS

an all-around electrical trouble shooter

- Measures A.C. and D.C. Voltages, A.C. and D.C. Current, Resistances, etc.
- Will measure the current consumption while the appliance under test is in operation. The appliance or utility may be plugged directly into the front panel receptacle. A special pair of insulated clip-end leads is included for motors, etc.
- Incorporates a sensitive direct-reading resistance range which will accurately measure all resistances commonly used in electrical appliances, motors, etc. This range will enable continuity checks and tests for shorts and opens.
- Will test thermostats, radio tube filaments, bulbs, fuses, fluorescents, condensers, switches, field coils, circuit breakers, lighting systems, etc.

Handsome round cornered molded bakelite case 3½" x 5⅞" x 2½". Complete with all test leads and instructions.

$13.90

SHIPPED ON APPROVAL

No Money With Order — No C.O.D.

Try it for 10 days before you buy. If completely satisfied send $3.90 and pay balance at rate of $2.00 per month for 5 months —No Interest or Carrying Charges Added. If not completely satisfied, return to us, no explanation necessary.

SUPERIOR ELECTRONIC CO., INC.
Dept. D-34 • 227 FULTON STREET • NEW YORK 7, N. Y.

GET MORE POWER!

Fisher's Compression SEAL $3.95 postpaid

- Stop Burning Oil!
- Restore Compression!

A small amount of Fisher's Compression SEAL in each cylinder bore will give you the economies of smooth, powerful (new car) performance and reduced oil consumption. Only takes minutes to apply . . . yet adds 10,000 more miles of economical driving pleasure to your car. A $25,000 insurance policy is your assurance it cannot harm the finest engine.

SATISFACTION GUARANTEED

Full purchase price refunded, if not completely satisfied. Why pay more when you can get Fisher's Compression SEAL . . . for less. No oil solvent baths necessary!

Send cash, check or M.O. today. Only $3.95 postpaid. Free Folder. Dealers inquire!

$3.95 Postpaid

ADVANCED ENGINEERING Dept. MI-10, Box 7013 Los Angeles 37, Calif.

---

make your own *Gems* 29.50 F.O.B.

All necessary lapidary equipment is furnished, including a super-charged diamond blade for sawing, and all wheels for grinding, shaping and polishing; also complete instructions. The complete equipment as shown, less motor and belt, for only $29.50, f.o.b., Burlington, Wisconsin. Write today for information and literature.

B&I MANUFACTURING CO.
Dept. E, Burlington, Wis.

Watch Repairing Pays Big Money Learn at home

Watch repairers in great demand. Train step-by-step in 10 easy lessons. We furnish all tools and 15 jewel watch and practice movement. Turn spare time into cash. A licensed school. Low cost. Send for FREE book today.

ILLINOIS SCHOOL OF WATCH REPAIRING
2870 Elston Ave., Dept. MI-102 Chicago 18, Ill.

A POSTCARD CAN PUT YOU IN A FINE BUSINESS!

Rush Card TODAY for FREE SELLING OUTFIT
Get in highly profitable, repeat-order shoe business! Sell amazing line of Air-Cushion Innersole comfort shoes to friends, neighbors, fellow workers. Dress, sport, work, safety shoes for men, women. Never sold in stores. Make $10 to $75, as much as $200 monthly just in spare time. No investment. Send card TODAY for FREE SELLING OUTFIT!

CONSOLIDATED SHOE SYSTEM
Box CD-24 Chippewa Falls, Wisconsin

Don't miss
November MECHANIX ILLUSTRATED
Special home building and repair section.

HULL AUTO COMPASSES ALSO SAVE THE DAY IN STRANGE CITY TRAFFIC

Watching for road signs in city traffic calls for an extra pair of eyes . . . and every intersection is an opportunity to make a wrong turn. Here, as on the open road, Hull Auto Compass drivers sail confidently through. Write for local dealer's name, free literature.

HULL MFG. CO.
P. O. Box 246-M-9
Warren, Ohio

Beacon Lite ILLUMINATED $6.95
STREAMLINE STANDARD $4.95

PLAYS GUITAR *IN 7 DAYS* *OR GET MONEY BACK*

Let Ed Sale, top Radio Guitarist, teach you to play a song the very first day, and **any** song by ear or note in 7 days! His famous book contains 52 photos, 87 chord charts, etc. Shows how to tune, keep time, build chords, bass runs, dance chords, swing, etc., plus 110 Popular Songs, words and music. Surprise friends, relatives. Popularity and fun galore. **SEND NO MONEY!** Just name and address to Ed Sale and pay postman $1.98 plus C.O.D. postage (or send $2 with order and I pay postage. Same guarantee).

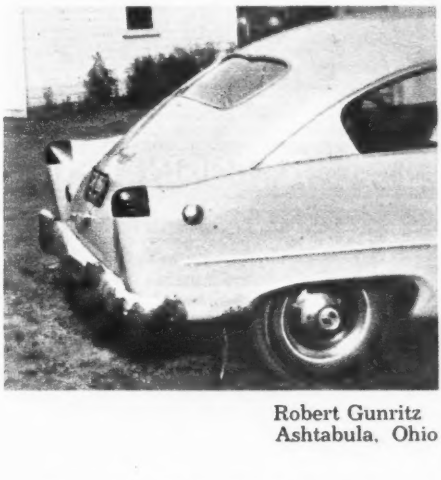
ED SALE Studio 2001 **POINT PLEASANT, N. J.**

Dear Editor—

[Continued from page 33]

Custom Taping

Here's my Henry J. with tail lights made from white adhesive tape painted red.



Robert Gunritz
Ashtabula, Ohio

Roaring Twenty Hot Rod

Here's a young speed demon snapped back in the '20's. Detroit could learn a lot from this car. Note the absence of chrome and the lack of a bathtub body. Though drafty at high speeds, the excellent vision easily offsets this. Easy to heat for winter driving—you merely remove a cap on the driver's seat and drop in a match.

Cluff Dilley
Ephrata, Wash.

Start as high as $3,795.00 a Year

(Veterans Get Special Preference)

Get Ready Now for next Examinations

City Mail Carriers, Post Office Clerks

Clerks and Carriers now get $3,270.00 the first year of regular employment and automatically increase $100 a year to $4,070.00. Open to Men—Women 18 to 50. Clerks and Carriers can be promoted to other postal positions paying as high as $8,437.00.

Railway Postal Clerks

Railway Postal Clerks get $3,470.00 the first year of regular employment, being paid on the first and fifteenth of each month. ($144.58 each pay day.) Their pay is automatically increased yearly to $4,270.00. Advance may be had to Chief Clerk at $6,565.00 a year. Men only.

RAILWAY POSTAL CLERKS

TRAVEL FOR "UNCLE SAM"!

3 Days On—3 Days Off—Full Pay

Railway Postal Clerks on long runs usually work 3 days and have 3 days off duty or in the same proportion. During this off duty their pay continues just as though they were working. They travel on a pass when on business. When they grow old, they are retired with a pension.

Many Other Positions

Many other positions are obtainable. Rural Carriers—Stenographers—Typists—Port Patrol Officers—Customs Inspectors—Meat Inspectors—etc. Those wishing these positions should qualify at once.

Get Free List of Positions

Fill out the following coupon. Tear it off and mail it today—NOW, at once.

Although not government controlled, this can be your first step in your getting a big-paid government job.

FRANKLIN INSTITUTE, Dept. N-77
Rochester 4, N. Y.

Rush to me, entirely free of charge (1) a full description of U. S. Government Jobs; (2) Free copy of illustrated 32-page book, "How to Get a U. S. Government Job" with (3) List of U. S. Government Jobs; (4) Tell me how to qualify for one of these jobs.

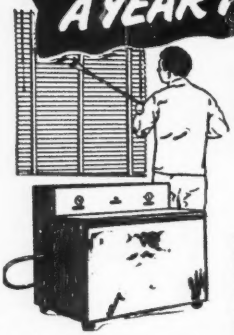
Name..... Age.....

Street .....

City .....

Use This Coupon Before You Mislay It. Write or Print Plainly.

BUILD A $15,000 A YEAR FUTURE!



IN THE EXCITING NEW BUSINESS OF

LAUNDERING VENETIAN BLINDS

There is big money to be made cleaning Venetian Blinds and a permanent, fast growing, Lifetime Business, besides.

An amazing new kind of business of your own in a field that is growing like mad. Millions of Venetian Blinds need laundering at regular intervals. With our new patented machine, you can start small—using your basement, garage or utility room to begin with. You can expand as your business increases by leaps and bounds. Income up to $200.00 daily already being made by others. Small investment for equipment starts your own lifetime business—and monthly payment plan permits you to pay for it as you grow.

FREE Get all the facts about this sensational new kind of machine that launders blinds so fast that your charges are unbelievably low. People would rather send blinds to you than do the work themselves. Yet, you make 700% profit on every blind you clean. Get names of successful owners near you. Get details of the full amazing plan without obligation. Be first in your territory to start a business that has brought $15,000 PROFITS the first year to others. Wire today or send name on postcard.

VENETIAN BLIND LAUNDRY EQUIPMENT CO. INC.
442 N. SENECA ST. DEPT. 1310 WICHITA 12, KANSAS

"I Have Earned an Average of $15.20 AN HOUR"

with Science's New Midget Miracle, the PRESTO Fire Extinguisher

W. F. Wydallis

Says William F. Wydallis, Ohio.
Many Others "Cleaning Up"—So Can YOU!

OVER 11,000 people died in fires last year. An eager public has been waiting for a practical new kind of fire extinguisher. Now it's *here*! Tiny "Presto" is about the size of a flashlight. Does the job of bulky extinguishers that cost 4 times as much and are 8 times as heavy. Ends fires fast as 2 seconds. Fits in palm of hand. Never corrodes. *Guaranteed for 20 years!* Sells for only $3.98!

Science's New Midget Miracle "PRESTO"

You can make good money showing this new discovery to civil defense workers, owners of homes, cars, boats, farms, etc., and to stores for re-sale. Stanley Hyman reports making over $1000 a month. H. J. Kerr, $20 a day.

What's the secret of "Presto's" amazing power? It's a new wonder chemical developed during the war, found to be 1.5 to 6 times as effective as chemical contents of other extinguishers on an equal weight basis. Makes possible, for the *first time*, an extinguisher that is small, light, and *amazingly effective*.

Help supply the demand for this important new discovery. Write for FREE Sales Kit. No obligation; no capital required. But don't put it off. Every day you hesitate may cost you $10, $15, or even $50 you *could* be making.

Send postcard or letter to: **MERLITE INDUSTRIES, Inc., Dept. 1010, 201 East 16th Street, New York 3, N. Y. IN CANADA: Mopa, Co., Ltd., 371 Dowd St., Montreal 1, P.Q.** *(If you want demonstration sample too, send $2.5o. Money back if you wish. Returnable for FREE refills.)*

WARN HUB CAP MAKES 2 JEEPS OUT OF 1

$20.00 Prepaid U. S., Canada

Ends front wheel drag on 4-wheel drive Willys vehicles, Army ¾ ton Dodge, Chev.

Saves gas up to 5 miles per gallon, tire wear, front axles, increases speed and power. Stops shimmy—front wheels coast out of gear! 4-wheel drive handles, performs, climbs like 2-wheel. Install or remove WARN HUB CAPS in 10 minutes. Polished aluminum, guaranteed. Rush check, M.O., or C.O.D. Write for circular.

WARN MFG. CO., P. O. Box 6064-L, Seattle 68, Wash.

AMAZING NEW POCKET SIZE RADIO!

NO TUBES, BATTERIES OR ELECTRIC "PLUG-INS" NEEDED. "TUNES IN" MOST LOCAL RADIO STATIONS with STATIC-FREE CLEAR TONE. Has new perma-crystal diode and TINY SELF-CONTAINED SPEAKER PHONE—A marvelous real tiny pocket size radio to take with you anywhere you go—FOR REAL FUN AND ENJOYMENT. GUARANTEED TO WORK and should last for years! **SEND $1.00** (Cash, M.O., Ck.) and pay postman $3.99 C. O. D. postage or send $4.99 for p.p. delivery. COMPLETE ready to play. By mail only from: **Midway Co., Dept. PMI-10, Kearney, Nebr.**

UNLIMITED OPPORTUNITIES IN ENGINEERING

BACHELOR OF SCIENCE DEGREE IN 27 MONTHS in Mech., Civil, Elect., Chem., Aero, Radio (Telev.) Engineering; Bus. Adm., Acct. Extensive campus, well equipped buildings and labs. Low cost. Prep. courses. Personalized instruction. Big demand for graduates. Serious shortage of engineers. Prepare now for the opportunities ahead. Founded 1884. World wide enrollment. **Enter Jan., March, June, Sept. Write for Catalog.**

TRI-STATE COLLEGE
6102 College Ave., Angola, Indiana

CLASSIFIED
NOW ON PAGE 45
ADVERTISEMENTS

GET THIS SUIT AS A BONUS!

Sell popular Smith tailored-to-measure suits. Make up to $10.00-$15.00 daily taking orders from friends. You get paid 3 times—(1) when you take the order and pocket the cash profit,—(2) when we pay you an EXTRA cash bonus,—(3) when you get your own suit as an added bonus, without cost. No experience needed. Send for FREE selling kit and sample line. Write fully, give age, sales exp., etc.

W. D. SMITH & CO., Dept. K
833 W. Jackson Blvd., Chicago 7, Ill.

Make Money SELLING Eshelman Tractors and DOING GARDEN WORK

ESHELMAN FOR BETTER LAWNS AND GARDENS

RAKES, PLOWS, CULTIVATES, HARROWS, HAULS, SPRAYS, SAWS, DOZER, MOWS, CUTS, ROLLS, SNOW PLOW

Low as $95 Plus Taxes

1½ to 6 HP

also POWER MOWERS and RIDING TRACTORS

Women can operate it.

Also Power Reverse Free Catalog. Write Eshelman, Dept. 624 119 Light St., Baltimore 2, Md.

$5000.00 IN PRIZES — DRAW MY HEAD

1st & 2nd PRIZES
COMPLETE $130 ART COURSE
30 Other Valuable Prizes

Your Drawing Judged & Answered. Take this test and try for a thrilling prize. Discover if you have profitable Art Talent. You may gain a lifetime of happiness and high earnings if you mail your drawing today. Amateurs only. Our present students not eligible. Copy this girl 4" to 6" high in pen or pencil and mail to us. None returned. Winners notified. New $5000 contest each month. Your drawing will be entered in contest for month in which we receive it. Send your drawing now with your name, address, age, occupation. Enter today.

WALLER ART EXCHANGE Studio 156, 1000 N. Charles St. Baltimore 1, Md.

Invention Clinic

[*Continued from page* 26]

Invention Background

Counterparts of many of the modern sprinklers may be found in the early records of the Patent Office. Three of these relate to "a flexible tube which is caused to wiggle or vibrate in an erratic manner by the effluent liquid." One of these dates back to 1873. Another in the form of three "snakes" attached to the coupling was protected in 1879. The latter had springs around each rubber tube to give greater flexibility toward the free ends. The third used an ordinary nozzle in a holder so arranged that it would flop from side to side by the action of a trip.

Many of the early inventors concerned themselves with all sorts of sprinkler heads and systems relating to permanent installations operated via underground pipes. Some of the patents point up the difficulties of others. One reads that the article "becomes inoperative when grass is permitted to grow over or close to the head" or "when foreign matter accumulates within the recess" in which sprinklers are located. Then there are the problems of water locating within the recesses, impossibility of perfect drainage of pipes and systems to prevent frost damage, control, replacement, adjustment for changing ground levels or contours, and the like. In some, sprinkler heads remained on a level with the ground, in others they were elevated by water pressure or other means while in operation. Some have automatic covers to close over sprinkler heads, some drop into concrete troughs. To become popular today, such permanent installations would have to be diminished by a 100 times with reference to costs.

Quite a number of inventors have felt that a better distribution of water is possible by varying the sizes of the openings in a perforated plate. Except when pressure is high, most of the water will escape through the larger holes because water will take the path of least resistance. So don't be fooled here.

Novelties should be avoided, although many are found among the patents. One is a grotesque human figure which swings a hose and rotates to "Create a highly amusing appearance quite entertaining to spectators." Another is a garden fan to provide a breeze while water is distributed to the garden.

Square areas are covered by other than properly perforated plates in about 100 patents which involve the use of shields, partflow cut-offs, swaying arms and similar methods.

Yet with all the patents, the perfect sprinkler remains to be invented. •

DO
PRINTING
WITHOUT A PRINTING PRESS

SCREEN PRINT

I'LL SHOW YOU HOW YOU CAN EARN $10 Per Hr. SPARE TIME!

AMAZING NEW HOME BUSINESS!

SENSATIONAL NEW TRADE SECRETS CAN BE YOURS — WITHOUT RISKING ONE CENT. Now, huge profits can be yours —you can start your own profitable printing business today—this week—or this month. You need no printing press; *no other expensive equipment either.* Every closely guarded secret of Screen-Printing (The New Miracle Way) can be yours. Don't delay.

GET INTO BUSINESS FOR YOURSELF! Be your own boss. Many people are finding Screen-Printing the opportunity to establish a spare time home business – without sacrificing job or pay check. The chance of a lifetime to "cash-in" on a new printing method not generally known. Orders come from stores, markets, gas stations, theaters –from every kind of business–A HUGE DEMAND! Help us fill it!

EASY TO LEARN — NO EXPERIENCE NEEDED! Anyone (young or old) can profit handsomely with this sensational new method. Earn while you learn! Materials cost you only 10%–you earn 90%. Few businesses make this high profit.

EVERYTHING YOU NEED TO START NOW! Complete easy step-by-step instructions–including all secrets· illustrated plus large amount of materials–everything you need to make big money immediately–even a ready-made business plan which guides you every step of the way. This all can be yours – at our risk!

SCREEN-PRINT IN DEFENSE! Instrument faces, insignias, flags–hundreds of defense products are produced by Screen-Printing. Big opportunity for War Contracts – offers you big extra money if your wages are frozen too.

SCREEN-PRINT Dept. 310
1010 South Los Angeles Street,
Los Angeles 15, California

PRINT POSTERS
FOR SALE
PRINT SIGNS
PRINT FABRICS
PRINT ON GLASS
PRINT INSTRUMENTS
PRINT LABELS
PRINT NOVELTIES
PRINT ANYTHING—PRINT EVERYTHING IN BEAUTIFUL COLORS TOO!

LOOK! WHAT OTHERS ARE SAYING ABOUT THIS NEW PRINTING DISCOVERY

"It works like a charm. I'm so interested I almost forget to eat my meals." Mr. E. M.—Missouri

"Wonderful new method ... made $80.00 first week ... swamped with orders." Mr. R. T.—Florida

"My first attempt at Screen-Printing netted me $40.00." Mr. J. B.—Canada

"Screen-Printing is nothing less than fascinating." Mr. S. M. D.—Massachusetts

"I would not take $1,000 for it right now. Just what I have been searching the world over for." Mr. C. S.—Nevada

"I have been making 75% of my expenses doing it only spare time. No hired help." Mr. E. L.—Ontario

FREE! SAMPLE BIG PROFITS PLAN & BROCHURE

MAIL TODAY! DON'T PUT IT OFF!

SCREEN PRINT CO., Dept. 310
1010 South Los Angeles Street, Los Angeles 15, California
Dear Mr. Nowak: Please rush FREE sample, brochure and plan—all details. Absolutely FREE.
Name _____
Address _____

Now! SEE MOVIES without SCREEN OR PROJECTOR with

MELTON *POCKET MOVIE* VIEWER

Men, you're going to have a world of fun with the MELTON MOVIE VIEWER, and you'll think of a dozen pals overseas to send one to. With the Melton, you can view a complete 50-foot roll of any standard 8 mm. film, without screen or projector. Easy to operate; just look in viewer and turn handle. You see clear live-action picture in color or black and white. A precision instrument you'll be proud to own. Satisfaction, or money back. Only $4.95, ppd. Send to

MELTON INDUSTRIES, Inc.

Box 390 Dept. MI-3 Reno, Nev.

Add $1.00 ea. for film: ☐ Beauties of Bali ☐ Robinson-Turpin Fight ☐ Danger Trail ☐ A Thrill a Second ☐ Bathing Buddies ☐ Hit the Silk ☐ Grand Canyon

---

CORTINA *makes it* FUN *to*

SPEAK FRENCH-SPANISH

RUSSIAN-GERMAN
ITALIAN-BRAZILIAN-JAPANESE

"Learn by Listening" to CORTINA RECORDS, at home, the NATURAL way — quickly, easily, cheaply.

Only 15 Minutes a Day!

The CORTINA method, famous for 70 years, teaches you to speak like a native. THOUSANDS have found it the most fascinating, most effective way to learn languages for Pleasure, Business, Travel, Culture. INVESTIGATE!

Send For FREE BOOK!

Illustrated 32-page book, "The Cortinaphone Short-Cut" sent FREE. No obligation. Tells just what you want to know. Interesting. Get it!

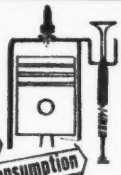
ALL NEW RECORDINGS ON UNBREAKABLE RECORDS — WRITE TODAY

CORTINA ACADEMY (Est. 1882)
Suite 2710, 105 W. 40 St., N. Y. 18, N. Y.
Please send me — without obligation — your free book. I am interested in (check)
☐ French ☐ Spanish ☐ German ☐ Italian ☐ Brazilian ☐ Russian ☐ Japanese

Name.....
Address.....
City.....State.....

☐ VETS! Check if NOW eligible under G. I. Bill.

MOTALOY



increases power
restores compression
reduces oil consumption

metal plates worn engine parts... as you drive

. . . and keeps your engine like new thereafter —guaranteed for 50,000 miles. Amazing new product works by itself, restores worn surfaces, and prevents further wear on cylinder walls, pistons, ring faces, valve seats, guides and stems. Your old car or truck runs like new—your new car stays new—and costs less to run with MOTALOY. Inexpensive, no tools needed. Guaranteed Safe.

Write for FREE details Now!

GARDEN STATE SALES, 201 E. 5th St., Plainfield 3, N. J.

LEARN DRAFTING
AT HOME IN SPARE TIME!

DESIGN YOUR OWN FUTURE!

Enjoy constant employment in an interesting big paying profession. CTS has trained thousands of men at home. CTS gives you 50 illustrated lesson manuals, professional drafting instruments, drafting table, supplies, etc.—everything you need. Send now for FREE book and special PAY LATER form. CHRISTY TRADES SCHOOL, 4432 N. Kedzie, Dept. DB-2302, Chicago 25.

BOYS! MAKE YOUR OWN RADIO

Make your own simple, tubeless, batteryless Crystal Radio. SEND 25c for a GENUINE MELOMITE CRYSTAL with complete illustrated instructions for making your own set. Crystal sent postpaid with instructions and our own publication, "THE MAGIC CRYSTAL" which is full of news, diagrams, questions and answers of interest.

SEND 25c FOR YOUR CRYSTAL TODAY!

ALVA ALLEN RADIO Dept. MI-10 Clinton, Mo.

HOLLYWOOD BRONZE SUPPLY

BRONZE BABY SHOE MOUNTINGS

Are NOW AVAILABLE wholesale from our Eastern Distributor to give you FASTER Service at LOWER Costs! Send orders or requests for NEW Price Lists to:

HOLLYWOOD BRONZE SUPPLY of OHIO
15401 Miles Ave., Cleveland 28, Ohio

If your car burns oil you need LOEB. New British discovery cuts oil consumption, stops piston slap, restores compression, increases mileage. The treatment lasts 10,000 miles.

6 cyl. cars $3.95 8 cyl. $4.75

Details, FROST, 36 Cross St. Leominster, Mass.

EX30

HUNTERS! ATTENTION!

BRAND NEW

30 DAY FREE TRIAL

High Power
BINOCULARS

Finest Precision Optics
Featherlight
Money Back Guarantee
Easy Pay Plan
Leather Case Incl'd.

33 MODELS $17.95 up

Free! Catalog & Book "How to Select Binoculars"
Dealer Inquiries Invited

BUSHNELL *Binoculars*

Bushnell Bldg., Dept. MX50 Pasadena 1, Calif.

$ SAVE $

ORDER BY MAIL

From

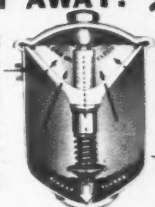
NEWHOUSE AUTOMOTIVE

WORLD'S LARGEST DISTRIBUTOR OF SPEED AND POWER EQUIPMENT

STOP THROWING MONEY AWAY!

NEW, PERMANENT OIL FILTER ELEMENT

NEVER NEEDS REPLACING! *GUARANTEED 10 YEARS*



The sensational FILTERALL oil filter forces all your oil through a porous bronze filter element which need never be replaced. It filters out dirt particles smaller than 1/100,000 of an inch as soon as your engine starts and allows no oil loss or bypass regardless of engine temperature. It saves the quart of oil soaked up by ordinary filter elements and it does not absorb valuable, protective oil additives. Filterall pays for itself over and over by saving oil, engine repair, and **ending the expense of stock filter-element replacement.** Fits all cars and light trucks. Element cleans easily by rinsing in gasoline. Complete filter unit (Give make of car) $12.95. Permanent Element only . . . (To fit in your present filter case) **$6.95**

(Give make of present filter.)

SAVE GAS

WITH A FUEL PRESSURE REGULATOR!

STOP: ✔ Power Loss ✔ Fuel Waste ✔ Carburetor Flooding

MANY USERS CLAIM UP TO 25% BETTER MILEAGE as this revolutionary new accessory stops gas waste caused by fuel pump pulsation. It eliminates carburetor overflowing and fuel "surge." Stops the annoyance and danger of "motor cut-out." As this precision regulator s-m-o-o-t-h-s fuel flow, it also prevents vapor lock and percolating. It pays for itself ten-fold with gas savings, by eliminating frequent carburetor adjustment and by reducing engine and carburetor wear. Fits all cars and trucks. **$5.95**
30 day "money back" guarantee! Postpaid...
(Or send $1.00, balance C.O.D.)

CUSTOMIZE YOUR CAR WITH A CONTINENTAL KIT!

Install It Yourself and Save

Give your car that longer, lower 1960 look. Make tire changing quick and easy. Instructions show how to easily install it yourself.

Kit is complete with gravel guard pan, 3 section tire cover, fender trim cover (Ford), remote control lock release (Chevy), chrome welts, special hub cap, license light, safety lock assembly (Ford), wheel mount bracket, bumper extension (Ford), and all necessary bolts and nuts for installation. Metal tire cover and gravel guard in primer-coat paint.

Chevrolet kit (fits all Styleline body styles, tire size 670x15) 1949 thru 1952..... **$89.50**
Ford Kit (fits all body styles) 1950 thru 1952..... **$79.50**

OTHER KIT PRICES

Kaiser (1947-52)	$134.50	Packard (1951-52)	$149.50
Cadillac (1950-52)	149.50	Studebaker (1951-52)	139.00
Mercury (1951-52)	139.00	Oldsmobile (1951-52)	149.50

NEWHOUSE AUTOMOTIVE, Dept. CM-10, 5805 E. Beverly Blvd., Los Angeles 22, Calif.

FREE!

$ "how to Pick Up A Fortune In Gems!" $

Read how a man and woman found thousands of dollars worth of Tourmaline while on vacation . . . how a workman uncovered a 10 pound Garnet right in New York City . . . and many other actual discoveries in this report from MECHANIX ILLUSTRATED.

WILL YOU PASS RIGHT BY A FORTUNE TODAY?

Did you know that some of those "pretty" rocks you see may be valuable gemstones? . . . that a greenish rock you skim across a creek might actually be Tourmaline . . . (worth up to $80 an ounce) . . . that a black rock you kicked aside with your foot, might turn out to be a fortune in Opal! . . . that many stones may be quickly polished into jewelry settings worth up to $30 and more, in your own home after only 4 or 5 hours practice!

GEM KRAFT SHOWS YOU HOW TO PROFIT!

Thousands of people have become "rockhounds" just for the fun of it! NOW—GEM KRAFT shows you how this fascinating hobby may be turned into a profitable home-business! GEM KRAFT shows how to identify valuable stones . . . where to look, how to make things of value . . . and, how to proceed to make your hobby pay off! PROFITS UP TO $6 AN HOUR in your spare time are possible.

SEND FOR YOUR FREE COPY—NOW!

If you passed a fortune by today — DON'T PASS IT BY TOMORROW! GEM KRAFT may be your one opportunity for the life you've always dreamed—friends . . . money . . . real security for you and your family. Send today—NOW, for your free copy of "HOW TO PICK UP A FORTUNE IN GEMS." Also, FREE PLAN, by a recognized authority, showing how good profits in all branches of GEM KRAFT may be yours! Write today. Air Mail reaches us overnight!

GEM KRAFTERS, Dept. 1A, 1717 Westwood Blvd., Los Angeles 24, Calif.

Send for this BIG NEW Hunt's WOODWORKERS CATALOG NO. 19

ONLY 15¢

NEW LOW PRICES

Offers greatest selection of fine domestic and imported woods—and hundreds of woodworkers items at bargain prices!

You'll save time and money with this big, new catalog. Contains everything wood craftsman needs. Shows 32 rare and fancy woods in color...43 veneer designs...275 scroll patterns...multicolor inlays, overlays, bandings...all kinds of tools, machinery, cabinet hardware, ornaments, mouldings...and pages of valuable tips, ideas, information, instruction. Send for your copy NOW. Only 15¢—refundable on your first order.

144 PAGES QUICK DELIVERY

on maple, poplar, oak, mahogany, red cedar, cherry, walnut, and many others—all properly seasoned and kiln dried.

MAIL THIS COUPON—TODAY!

CRAFTSMAN WOOD SERVICE CO.
2729 S. Mary St., Dept. G-10
Chicago 8, Illinois

Send me the big, new, money-saving Catalog No. 19. Enclosed is 15¢—refundable on my first order.

Name_____
Address_____
City_____ Zone____ State_____

"How to Become a Mail Order Millionaire"

Read the inside facts about hundreds of "little fellows" who are running Mail Order businesses from their homes—many making $20,000 and more **every year!** Learn how small investments ($16.80 in one case!) have mushroomed into profits of thousands. This incredible reprint from *Mechanix Illustrated* will be sent absolutely **free,** along with details showing how you can quickly master the secrets of getting orders and money in your daily mail, *in a business that's all yours.* Rush name today. A postcard will do.

SENT FREE!
RUSH NAME ON POSTCARD TODAY

The L. W. SURVEY 7070 North Clark Street, Dept. 410, Chicago 26, Ill.

START A SIDELINE

AT HOME—Pleasant, Spare Time Work

No House-To-House Selling

Pays $5.00 Profit in One Hour

EASY TO LEARN—It costs little to start. Tested plan brings orders to you for metalized Baby Shoes. You do work on equipment we furnish. Plenty of work in every neighborhood to keep a couple making good money.

FREE Send name for details on Warner Success Plan. No charge. Learn about this interesting, profitable homework. Business booming. Write now.

WARNER ELECTRIC CO., 1512 Jarvis Ave., Dept. M-6-S, Chicago 26, Ill.

HOME TV SERVICING —THIS EASY WAY

SHOOT *TV* TROUBLE *FAST*

with H. G. CISIN'S "TV DOCTOR"
Shows how to fix your own set rapidly and SAFELY!

YOURS TO TRY 5 DAYS FREE

Save money, throw away service contracts. Here's a real "fix-it-yourself" book written in language you can understand by a noted TV expert.

TUBES CAUSE 85% OF TV TROUBLES

The **TV DOCTOR** shows you how to locate and change all defective tubes in your set with complete safety.

WITHOUT EXPERIENCE—PICTURES & TEXT MAKE FIXING IT YOURSELF EASY!

Reveals many closely guarded **TRADE SECRETS.** Lists over 123 trouble conditions. Method applies to **ALL TV SETS,** even newest RCA, Philco or any of 2000 models old or new. Copyrighted **TROUBLE SHOOTING GUIDE** pin-points hundreds of troubles.

ELEVEN (11) money-saving, fact-crammed, detailed, profusely illustrated chapters include: exactly how to locate tube or part causing trouble; practical ways to combat interference and ghosts; how to appraise and buy a better TV set for less money; how to install the best antenna for your location; also valuable information on wave traps, lead-ins, color TV, names & addresses of TV mfgs.—a veritable encyclopedia.

Save Expensive Service Calls
Be Assured Of Continual TV Pleasures
Only $1—you'll say it's worth hundreds!

$1

SPECIAL OFFER: A new "TV Dictionary & **PICTURE GUIDE**" with illustrations, explaining TV Terms and selling for $1; H. G. Cisin's famous **"TV TROUBLE SHOOTING METHOD"** which trains you to be a **TV DIAGNOSTICIAN & TV SERVICEMAN** . . . sells for $1—PLUS **"TV DOCTOR"**—all 3 for only $2. postpaid. You save $1.

RUSH COUPON: Enclose $2. 5-days to read without risk or return for refund.

H. G. CISIN, Consulting Engineer
Department M-6
200 Clinton Street, Brooklyn 2, N. Y.

☐ Enclosed find $2 full payment for **"TV DOCTOR," "TV TROUBLE SHOOTING METHOD" & "TV PICTURE GUIDE"**—Rush all 3 TV Books postpaid.

☐ Enclosed find $1. in full payment for **"TV DOCTOR." Rush copy postpaid.**

Name _____
Address _____
City _____ Zone ____ State _____

ORDER NOW! POSTPAID

TRY 30 DAYS AT *OUR RISK!*

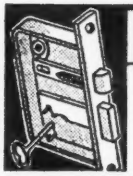
Low in cost

New Advertising Machine Prints and Illustrates Gov't Post Cards.

FREE Send name—learn how all types of business are boosting sales with Post-card Advertising. We'll also send **FREE** illustrated book of money making ideas for your business—complete, unique advertising plans—and ***30-day Trial Offer.***

CARDMASTER CO., 1920 Sunnyside Ave.
Dept. 2010 CHICAGO 40, ILLINOIS

5 year Guarantee



FIX LOCKS

Learn Locksmithing and Keymaking from Experts in Your Spare Time at Home!
Year Round Steady Income in This Permanent And Respected Field. Full Or Part Time. All Materials And Special Tools Supplied.
Send For FREE BOOKLET.
LOCK INSTITUTE, Dept. M-33
15 Park Ave. Rutherford, N. J.
Lic. by State of N. J. *V.A. Approved*

HAVE MORE FUN TRAVELING

DINSMORE AUTO COMPASSES are a constant source of information, interest and education. Passengers love it! Saves time, worry. No back-track, no wrong turns. Quickly installed. You'll enjoy every minute of driving with America's first and finest illuminated auto compass. Fully jeweled with micromatic compensator. If your dealer cannot supply, order direct. Only $5.49 postpaid.

FREE Folder on compasses for the hunter, camper, fisherman, sailor, plus a history of the compass, "Pants, Knives and Compasses." Send for your copy today.

An Ideal Gift

FITS ALL CARS

DINSMORE INSTRUMENT COMPANY 1886-39 Kelso St., Flint 1, Michigan

Planning to build? Don't miss November MECHANIX ILLUSTRATED Special home section.

AMAZING NEW "*TUBELESS*" RADIO

Money Back Guarantee COMPLETE KIT **$8.95**

Plays anywhere. Needs no batteries. Gets distant stations clearly. Germanium Crystal Diode eliminates costly radio tubes. Special selector switch for best reception. Head phones, aerial kit included. Nothing else to buy. Assembled in minutes. Send $1.00 deposit now, we'll mail C.O.D. for balance.

JAEGER & CO.
P. O. BOX 246D SKOKIE, ILL.

GIGANTIC SURPLUS SALE!

- Power Plants
- Hand Winches
- Chain Hoists
- Telephones
- Binoculars
- Barometers
- Air Compressors
- Water Pumps
- Electric Tools
- Contour Levels
- Flood Lights
- Air Grease Guns
- Paint Spray Outfits
- Gasoline Chain Saws
- Weed Spray Outfits
- Magnetic Recorders
- Hydraulic Units
- 100s other items

We pay all freight. Rush card for large illustrated bargain sale catalog. Send today.

FREE CATALOG

BURDEN SALES COMPANY
845 "O" ST. LINCOLN, NEBRASKA

WATCHMAKING

FREE SAMPLE LESSON

CHICAGO SCHOOL OF WATCHMAKING
1608 Milwaukee, Dept. 6102, Chicago 47, Ill.

Show me without obligation how I can learn watch repairing at home. Rush free sample.

Name .....
Address .....
City ..... Z..... State.....

AMAZING IMPROVED ELECTRIC SPRAYER MAKES HOME PAINTING EASY

Why wear yourself out using Expensive old-fashioned brushes. **MISTIFIER SPRAYER** quickly, smoothly and evenly sprays glossy enamels, lacquers, insecticides, mothproofers and oils. All in one self contained unit that requires no compressor, motor or accessories. All metal non-corrosive parts makes this unit a LIFELONG useful tool. Sturdily constructed, weighs only 2 lbs., uses standard replaceable Mason jar. Spray volume is adjustable, 80 POUNDS PRESSURE, fingertip control. AC-110 volts. **FOR PAINTING, SPRAYING, DISINFECTING, MOTHPROOFING, MISTIFIER SPRAYER** works wonderful when painting wicker and all other furniture, cars, metal cans, partitions, concrete brickwork, rough wood, boats, wagons, screens, cabinets, Venetian blinds. Wonderful for Mothproofing clothes, rugs, drapes, storage closets, etc. **MISTIFIER** is Safe and Easy to use.

SPRAY FURNITURE

PAINT AUTOS

10 DAYS FREE TRIAL

LIFETIME GUARANTEE

ONLY **9.95**

Complete—No Extras to Buy

We Guarantee that **MISTIFIER SPRAYER** will apply paint smoothly, quickly, easily—or return it within 10 days for full purchase price refund. Only $9.95 Postpaid or sent C.O.D. plus postage. Full Instructions. Order Now.

IMPERIAL SALES, Dept. S-496
480 Lexington Ave., New York 17, N. Y.

OPPORTUNITY OF A LIFETIME!

SELL AIR CUSHION SHOES

Build a permanent "repeat" business of your own without one penny of investment! Sell John Neil Air-Cushion Shoes Direct from famous New England factory. Firestone Foamex cushions — complete line of men's dress, work, safety shoes! DuPont Neoprene non-marking soles, Women's and children's shoes. Fast deliveries from our mammoth stock department. Write for FREE catalog and complete instruction course — today!

Write today!

FREE catalog

JOHN NEIL SHOE CO.
DEPT. 912—Brockton 64, Mass.

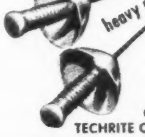
French STYLE DUELING SWORDS

SET OF TWO **$2.98** pair price

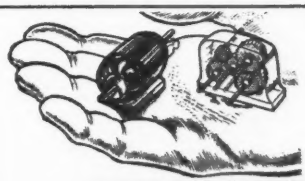
Once used in deadly combat—now an exciting sport! Learn right at home. Fun—safe—educational. These swords are made of fine blue spring steel, polished metal guards, turned handles, rubber safety tips. Fencing teaches quick thinking, develops coordination, posture. Since the Middle Ages, Europeans have enjoyed the sport of dueling. Now advocated by U.S. colleges. Set includes two swords and the booklet, "The Art of Fencing" Special mail order price.

43" long

heavy duty



YOUR MONEY REFUNDED IF NOT COMPLETELY SATISFIED Send $2.98 to
TECHRITE CORP. Box 12E, South Pasadena, Calif



COMPLETE MOTOR & GEAR KIT HOUSING BATTERIES CLIPS only **$2.98**

POWERFUL MOTOR:

One of the smallest precision motors ever built yet does GIANT-SIZED JOBS. Drives Model Planes, Boats, Construction Sets, Working Models, Trains, and Cars, etc., with amazing speed up to 6800 R.P.M. (or as little as 50 R.P.M.) using the reduction gears that come with this exciting set. This MIGHTY MIDGET does hundreds of jobs. It's a Honey! Looks exactly like a Big Motor yet measures 1"x1½" and weighs one ounce. For only $2.98 YOU GET LOTS MORE with this Mighty Midget. You get a complete set of gears and pulleys and a transparent multi-ratio gear box as well as a battery clip with two batteries and instructions. NO SHOCKS, SPARKS OR SHORTS. NO TRANSFORMER NEEDED. Reverses immediately too! Endless hours of fun. Enclose check or money order for $2.98 for this entire set and we will pay postage. C.O.D. orders plus postage.

IMPERIAL SALES CO.
480 Lexington Ave., Dept. M-810, N. Y. 17, N. Y.

Some make more, some less;
GEO. HELD reports—

$350 gross in single WEEK IN MY OWN BUSINESS

Here's wonderful opportunity to start money-making business of your own —with electric upholstery cleaner.

● Here's YOUR chance to start a money-making, year-'round business of your own and make the success you've dreamed about. R. O. Donnley took in $40 in seven hours. O. W. Ware landed a $750 hotel job. J. S. Corbit grossed $279.50 his first month. And so it goes. Homes, hotels, offices, clubs, all places where furniture is used, offer you big profit possibilities. Auto upholstery also.

NO SHOP OR OFFICE NECESSARY

● You clean furniture on customers' premises. No hauling. No high rents. Supplies are inexpensive, you operate at low cost from your home. What you take in is mostly profit.

DON'T DREAM—DO SOMETHING NOW

● It costs nothing to investigate an opportunity like this. If you want to be your own boss—free from layoffs, strikes and bosses, we will help you to start and succeed. Don't delay . . . read the facts, then decide for yourself.

MAIL COUPON TODAY FOR FREE BOOK

VON SCHRADER MFG. CO.
2032 "D" Pl., Racine, Wisconsin

Send at once (no obligation) your **FREE** booklet containing information about your Electric Upholstery Cleaner and how I can own my own permanent, profitable business.

Name_____

Address_____

City Zone State

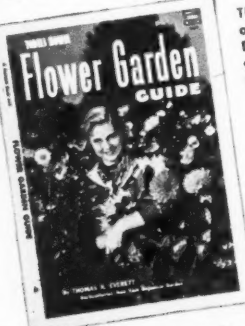
FAWCETT BOOKS

AT YOUR FAVORITE NEWSSTAND

HOW TO BUILD IT • Packed with practical projects. Furniture, toys, radio, workshop and outdoor equipment (Order No. 124)

THE DOG BOOK • Album of all recognized breeds. Dog shows, field trials, care, feeding. Hundreds of photos (Order No. 136)

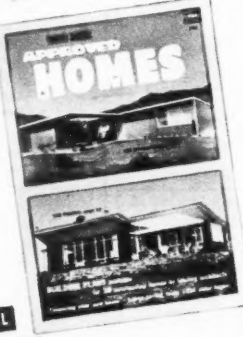
ANTIQUE FURNITURE • All periods and types. Where and how to buy. Use in the home. Directory of collections (Order No. 145)



FLOWER GARDEN GUIDE • Over 300 flowers described and pictured. Flower beds, borders, vines and rock gardens (Order No. 144)

BOAT SHOW • Complete descriptions and photos of 225 boats you can buy or build from kits. Boating information (Order No. 140)

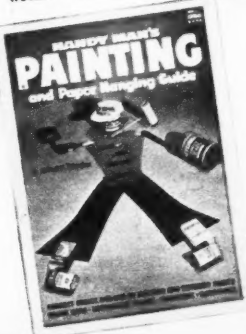
APPROVED HOMES • Plans for thirty new homes with traditional and modern styles. Building blueprints available (Order No. 142)



HUNTING HANDBOOK • A must for every hunter whether after varmints or big game. Tips on guns and ammunition, tracking and shooting. (Order No. 13

HOME DECORATING GUIDE • Room by room decoration of your home. Types of furniture, rugs, drapes (Order No. 122)

PAINTING AND PAPER HANGING GUIDE • Use of interior, exterior paints. Brush care. Furniture and woodwork (Order No. 138)



LOOK FOR THE SEAL

FAWCETT 75c BOOK

Ask your news dealer for these books. If he cannot supply you order by mail from FAWCETT BOOKS, Greenwich, Conn.

Dept. MI-10

Famous 15 and 17 Jewel BULOVA WATCHES $16.95 PLUS TAX

PRACTICALLY WHOLESALE TO YOU

LIFETIME WRITTEN GUARANTEE

Were Up to $59.50 SAVE $42.55

Also Choice Of
- Benrus • Gruen
- Waltham or
- Elgin Watches

You get these unredeemed **LIFETIME** guaranteed Bulova and other movements in latest style Yellow Gold Cases at this sensationally low price because we bought out SURPLUS STOCKS of leading New York and Md. Jewelers. Order now while they last. Specify make preferred and whether men's or ladies'! Only $16.95, plus $1.70 tax. Order right now.

FREE TRIAL OFFER! WEAR AT OUR RISK!

Money back guarantee in 10 days if not delighted!

SEND ONLY $1 with order. Pay balance C.O.D. plus postage. Or we pay postage if you enclose $16.95 plus $1.70 tax.

LIFETIME Guaranteed —17 Jewel Swiss WRIST WATCH

Worn by Army, Navy & Marines

Originally $59

$14.95 Plus $1.50 Tax

New Incablock, Shock-Protected

WATER-DUST PROOF

FREE! Handsome Expansion band with orders.

MARYLAND DISTRIBUTORS, Dept. 408

501 E. BALTIMORE ST., BALTIMORE 2, MD.

Write for Free Watch and Diamond Ring Catalog—Practically Wholesale Prices.

...Everything in SPEED equipment!

. . . the new SPEED PARTS CATALOGUE!

SPEED PARTS is owned and operated by Frank Del Roy, builder of the Jim Robbins Special, second place winner at the 1951 Indianapolis speedway classic . . . and many other famous racing cars. For the finest in famous brand speed equipment, see the new SPEED PARTS catalogue.

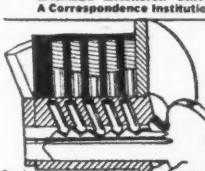
send 50c to . . .

SPEED PARTS, Inc. ROUTE 6 E. PATERSON, N. J.

BECOME AN EXPERT IN TRAFFIC

Traffic men earn $4,000 to $10,000 and up. Thousands of firms need experts on rates, tariffs, regulations. We train you thoroly in spare time at home for executive traffic jobs. Personal training under traffic authorities. Placement counsel and help. Write for free 48-page book "Traffic Management—the Fast Growing Profession."

LASALLE Extension University, 417 So. Dearborn St.
A Correspondence Institution Dept. 104937 Chicago 5, Ill.



Locksmithing AND KEY MAKING *Now Made Easy!*

Practical up-to-date course teaches you how to pick locks, de-code, make master keys, repair, install, service, etc. New self-instruction lessons for every handyman, homeowner, carpenter, mechanic, service station operator, fix-it shop, hardware dealer, gunsmith. 53 easy illustrated lessons. Full price only $4.95 postpaid; or C.O.D. plus postage. Satisfaction or refund guaranteed.

Complete course . . . now only $4.95

Nelson-Hall Co., 210 S. Clinton St., Dept. KY-3, Chicago 6, Ill.

Save MONEY! DRIVE BY "MILE-O-METER"

REG. U. S. PAT. OFF.

SAVE GAS

TUNE-UP ENGINE

MONEY-BACK GUARANTEE

CHECK PERFORMANCE

SAVE GAS

Install Mile-O-Meter on the dashboard of your car and start to save money right away. Mile-O-Meter shows how many miles-per-gallon you're getting as you drive, when your engine needs tuning up, and what adjustments to make for maximum power and economy. Fits all cars . . . easy to install . . . no holes to drill. Pays for itself over and over! Ideal for gifts!

Huge 24-page Motorist's Manual PLUS "Mile-O-Meter" Mileage Calculator included FREE!

DELUXE Model, Illuminated, chrome trim, 3⅝" dia. $14.95

STANDARD Model, 2⅜" dia. $ 9.75

Fed. Tax included — Shipped postage prepaid.

GALE HALL ENGINEERING

DEPT. 253 BOSTON 18, MASS.

High School at Home

Many Finish in 2 Years

No classes. No time wasted going to and from school. Progress as fast as your time and abilities permit. Standard H. S. texts supplied. Thousands enroll each year in this 54-year-old school. Send for FREE descriptive booklet.

AMERICAN SCHOOL, Dept. H728
Drexel at 58th St., Chicago 37, Ill.

Without obligation, please send FREE descriptive booklet.

Name .....

Address .....

Bass WEEJUNS ...for leisurely comfort

Bass QUAIL HUNTERS ...for field and stream

Bass SKI BOOTS ...for extra control

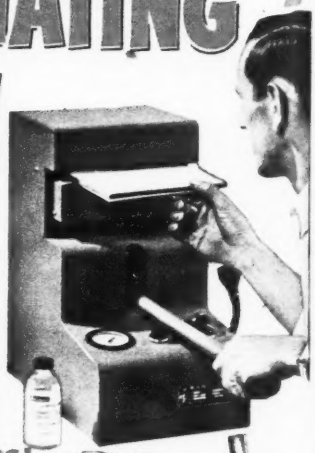
Bass SPORTOCASINS ...for better golf

G. H. BASS & CO. 40 Main Street Wilton, Maine

Get into . . .

PLASTIC LAMINATING AT HOME!

Sensational New "ONE MAN BUSINESS" . . pays $10 to $20 profit for each dollar of cost.



Make $20 to $30 a day by our MAGIC MAIL PLAN . . . get orders and cash from your mailman!

Here's the newest and most fascinating of all home-operated businesses. For the first time, a simplified machine brings the fabulous profits of Plastic Sealing and Plastic Laminating within the reach of the small operator. Can be operated in a corner of the kitchen, basement, or garage. And any man or woman, regardless of age, education, or experience—can learn this interesting work *in a few minutes of reading*—can turn out professional jobs *after one hour's practice.*

TWO EXCITING FIELDS FOR BIG PROFITS!

No house-to-house canvassing. No face-to-face selling. We not only supply the equipment you need for the work, but also show you exactly how to cash in big daily profits from two big demand fields.

A FORTUNE IN PLASTIC SEALING

Millions of people want to protect valuable cards, photographs, documents and papers against wear, soil, and damage. By our MAGIC MAIL Plan you get this business through the mails. Open envelopes and take out money and orders. Details of this plan will amaze you. It will be sent free. Just mail coupon.

ENORMOUS PROFITS IN LAMINATING

A creative, artistic business. Gift shops sell your entire output. Just a few of thousands of giftwares illustrated on this page. Beautiful colors. Endless designs. Exclusive "one of a kind" appeal brings sales at ten to twenty times the cost of materials. Beautiful illustrations and instructions for making these artistic novelties sent free.

The opportunities in Plastic Laminating are so big that space here does not permit even skimming the surface. To get any idea **FREE** at all of the size of these markets and your place in this sensational business you must read the details. See for yourself how easy it is to do the work—how you can put plastic sheets into your machine and take out a fortune—how money and orders come to you in the mail—how gift shops clamor to get more and more of your creations—how you can start with one machine and build up a big production plant with others doing the work—how you can get money and business from every State in the Union—how you can achieve independence without study or experience.

RUSH COUPON

Never before has such an opportunity been offered the small, home-operator—an opportunity to gain complete personal independence in a big money business of your own. Don't lose a minute. Get the facts at once. All information, fully illustrated with pictures, is free. Send the coupon—or send your name on a penny postcard. There is no charge now, or at any other time. We may be limited in the number of Warner Laminators that can be made up, so don't put this off. Send for the information on this exciting opportunity today.

WARNER ELECTRIC CO.,
1512 Jarvis, Dept. L-12-S, Chicago 26, Illinois

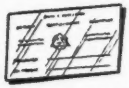
Thousands of Beautiful Art Creations

No one yet has been able to list the thousands of gorgeous articles that can be made by Laminating as explained in our Free Information. Just a few are COSTUME JEWELRY—CIGARETTE BOXES—JEWEL CASES—GLOVE AND HANDKERCHIEF BOXES—CUFF LINKS—NOVELTY BUTTONS—TRAY—CANDLESTICKS—COASTERS—CLOCK CASES—LAMP BASES PICTURE FRAMES—BOOK ENDS—PAPER KNIVES—KEY CHAIN CHARMS—CHECKERS—CHESSMEN—ADVERTISING SIGNS—NAMEPLATES—BOOKMARKS—BELT BUCKLES—TIE RACKS—KEEPSAKES OF ALL KINDS.

$5-$10-and $20 BILLS COME TO YOU IN THE MAIL

By our MAGIC MAIL Plan you sit at home, send out mail, and get back money and orders. Additional profits in supplying local people with lifetime protection for

SNAPSHOTS—IDENTIFICATION CARDS—DISCHARGE PAPERS—DRIVERS' LICENSES—SOCIAL SECURITY CARDS—VOTERS REG. CARDS—MENUS—BIRTH CERTIFICATES—CREDIT CARDS—BIRTH AND WEDDING ANNOUNCEMENTS—RAILROAD PASSES—IMPORTANT DOCUMENTS OF ALL KINDS.



Lifetime protection. See how laminating protects against wear, soiling, and moisture damage with its smooth, flexible, plastic coverings on each side. LIFE-TIME PROTECTION needed for valuable or sentimental objects of all kinds—even a priceless whisp of hair can be laminated. Think of the countless thousands of profit items for your Laminating Press.

WARNER ELECTRIC CO. Dept. L-12-S
1512 Jarvis, Chicago 26, Illinois

Rush complete information with illustrations showing the things I can make and the money possibilities in Plastic Laminating. All this is free. I do not pay a penny now or at any other time. No salesman is to call. Send all facts by prepaid mail. Be sure to tell me how I get orders and money from my Postman by your MAGIC MAIL Plan.

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

MI Classified Ads

Your advertisement can reach this mail-buying audience of multi-million readers for only 80c per word . . . payable in advance . . . minimum 10 words. Copy to be inserted in December issue must be in the office October 3. Mail to MECHANIX ILLUSTRATED, 67 West 44th Street, New York 36, N. Y. Word count: Zone number free. Figure one word: Name of state (New Jersey); name of city (New York); sets of characters as in key (14-D); also abbreviations as 35MM, 8x10, D.C., A.C.

• • • ADVERTISING SERVICE & AGENCIES

$10,800 PROFITS! YOUR Own Mailorder Business! No capital risk! "Success Plan" (worth $2) free! Write today! Treasury, 149 Storer, New Rochelle 11-X, N. Y.

ADVERTISE: 24 WORDS, 100 Canadian Newspapers, $5.50. Lists Free. Advertising Bureau, 10511-B Springfield, Chicago 43.

• • • AGENTS WANTED

AMAZING QUICK Easy Cash Is Yours. No selling necessary, just show Rainbow's beautiful Christmas Card Assortments. Children's Books, Gifts, Novelties, Personalized Stationery, Napkins, etc. Save Friends, Relatives, etc., time and money. No investment. Deal with one of New York's largest imprint companies for guaranteed satisfaction. Costs nothing to try. Write today. Samples on approval. Rainbow, 36 E. 1st St., New York 3.

MAKE EXTRA Money—for yourself, club or church. Up to 100% profit selling big value Christmas, All-Occasion greeting card assortments to friends, others. 7 leading 21 card $1.00 boxes, Religious and Novel cards. Gift Wrappings, Ribbons, Stationery, Napkins, Animated Books, Sewing Kits, unusual Gifts. Over 150 items. Bonus plan. Experience unnecessary. Write for Samples on approval, Special Offers. Hedenkamp, 361 Broadway, Dept. MI-20, N. Y.

AMAZING BIG Profits Selling Exclusive Sunshine Christmas Cards. Nationally Famous 21 for $1.00 assortment is unequalled, sells on sight. Other tremendous Sunshine Values: Merry Holly-Day, Nature Prints, Park Avenue Kromekotes, Scripture Text, Gift Wraps, Stationery, etc. Send for Samples on Approval. Earn Big Money Now! Sunshine Art Studios, Dept. MI-10, Springfield 1, Mass.

DO YOU Need Money? $35.00 is yours for selling only 50 boxes of our 300 Christmas Card line. This can be done in a single day. Free samples. Other leading boxes on approval. Many surprise items. Experience unnecessary. Free samples Personalized Christmas Cards. Stationery, Napkins. Write today. It costs you nothing to try. Cheerful Card Co., 10 White Plains, N. Y.

BE A Money Maker . . . Represent magazines year around. Wonderful home work. Big Christmas profits now. Liberal commissions. Everything furnished. Write for Free Catalog. McGregor Magazine Agency, Dept. 520A, Mount Morris, Ill.

MAN TO Earn $90 Week Up. Long needed invention. Advertised Post, Colliers, Country Gentleman. Prospects everywhere. Full or part time. Exclusive. No investment. Free Samples. Write Red Comet, Inc., Dept. 36-C, Littleton, Colo.

SELL FRIENDS amazing value Christmas, All Occasion greeting cards, new type gift wrappings, gifts that are different. Make up to $1.00 a box. Bonus. Experience unnecessary. Request Feature samples on approval and free samples Name Imprinted Christmas Cards, Stationery, Napkins. New England Art Publishers, North Abington 720-B, Mass.

$200 WEEKLY. NEW Invention. Amazing 4-second Presto Emergency tire chains, fit all modern auto wheels. National advertising building big demand. 3 sales daily to oil stations, dealers, etc., make $200 or more weekly. Territory going fast. Write Presto Chain Co., Dept. P-16, Des Moines 2, Iowa.

PHOTO-SALESMEN-AGENTS. Sell beautiful hand colored plastic enlargements and sensational new photo compacts, rings, bracelets, lockets, etc. Collect deposit, we deliver. Profitable sideline. Send card, for Free sample kit. Novel Portrait Co., 3343-B North Ave., Chicago, Ill.

VALUES GALORE—100 blades 45c. Gross needlebooks $4.80. Automatic cigarette lighters $7.20 dozen. Fullsize 25c Ballpens $8.40 gross. Bargain Catalog 5001 items free. Cutrate Wholesalers since 1916. Mills Sales Co., 26 West 23rd St., New Yerk.

EXCELLENT SIDELINE for printing and advertising salesmen. Decalcomania name plates in small quantities. Great demand. Also, make money with our line of Automobile Initials and Sign Letters. Free Samples. "Ralco." XL-Roxbury, Boston 19, Mass.

CHRISTMAS CARD Money-Makers! Everybody wants new 25 for $1.50 Gold-Name Cards. Cash in big. 161 fast-sellers. Profits to 100% on $1 boxes; Gift Bonuses. 4 assortments on approval; Imprints Free. Creative Cards, 2505 Cermak, Dept. 133-C, Chicago.

TAKE LARGE Unit Orders For Wool Uniforms, Caps, Shirts, Ties, Wallets, Personal Initialed Buckles With Belts, Cap Badges, 3000 Emblems. Send For Free Outfit Now! Hook-Fast Co., Dept. MI, Roanoke, Va.

$1 STARTS YOU in business. Sell fine $1 ties. $1.50 and up values only $7.20 dozen, you make $4.80. Send only $1 for 2 sample ties. Catalog free. Philip's Neckwear, Dept. 952, 20 West 22nd Street, New York 10.

MAKE MONEY Introducing World's Cutest Children's Dresses. Big selection adorable styles. Low prices. Complete display free. Rush name. Harford, Dept. H-4341, Cincinnati 25, Ohio.

BIG BARGAINS! Terrific Profits! Selling new—used Clothing. Suits $1.75. Pants 35c. Topcoats $1.00. Dresses 20c. Shoes 20c. As little as $10 starts you. No experience necessary. Free Wholesale Catalog. Superior, 1250-C Jefferson, Chicago 7.

MAKE WEDDING Profits. Sell invitations, napkins, matches. Samples free. Dunbar's, Middlebush 4, N. J.

NEW PLASTIC Mending Tape. Just press on! Repairs clothing instantly. Lightning seller. Samples sent on trial. Kristee 152, Akron, Ohio.

SELL AUTOMATIC Mechanical Tappets to Ford, Chevrolet, Mercury, Pontiac, Buick Special owners. Big profits. Money back if dissatisfied. Skinner-Moser, Dunedin, Fla.

NEED EXTRA Cash? Free Sales Kit. Sell personal initialed buckles with belts, cap badges, tie clasps, etc. Choose from 3000 emblems. Hook-Fast, Box 1425MI, Providence, R. I.

WHERE TO Buy 800,000 articles direct from Manufacturers. Save by buying direct. Sent Free. "Your Profits Under the Spotlight." Glass Pub. Co., Ellwood City 7, Penna.

BUY WHOLESALE thousands nationally advertised products at big discount. Sent free "The Wholesale Plan." American Buyers' Service, 629-MI Linden, Buffalo, N. Y.

GOLD LACQUERED and silver sign letters. Windows, doors, trucks. Standard Sizes. Penny and up Samples. Atlas-M, 544 West 79th, Chicago 20.

WHOLESALE CATALOGUE! Nationally advertised appliances, radios, watches, etc. Cam Company, 1717-58th St., Brooklyn 4, N. Y.

BUY WHOLESALE—25,000 items—Catalogue 25c. Matthews, 1472-D1 Broadway, N. Y. C. 36.

ADDRESS ENVELOPES! Immediate Commissions! Homeworking Outfit, 25c! Hirsch, Spring Valley 1, N. Y.

SELL BIG Money Maker to Men and Women. Easy handwork makes fast-selling useful articles. Sample free. Sunmade Company, Brockton 64, Mass.

A POSTCARD Can Put You In Business! Complete line. Leather jackets, 151 shoe styles. Big Commissions. No experience, no investment. Send postcard for Free outfit. Mason Shoe Mfg. Co., Dept. MA-23, Chippewa Falls, Wisc.

NYLON UNIFORMS, immediate delivery, immediate profits. Free sales kit. Superior Fabrics, Dept. 1-10, 3936 Market, Philadelphia 4, Penna.

SALESMEN, DISTRIBUTORS—Fast Selling Costume Jewelry direct from factory; big picture catalog free. Pickcraft, L-19 Bank, Attleboro, Mass.

BIG PROFITS selling ties. ($2.00 values), $6.50 dozen. Free catalog. Empire Cravats, 648B Broadway, New York 12.

HI QUALITY Nameplates For Homes, Banks, etc. Biggest profits, free samples. Whitney's, West Springfield, Mass.

BOOK "505 ODD, Successful Businesses" free. Work home! Expect "Odd"!! Pacific-21C, Oceanside, Calif.

"FOG-STOP" WINDSHIELD Cloth. Instantly removes blurry Mist, Frost, Sleet, Snow. Stops windshield fogging. Samples sent on trial. Kristee 153, Akron, Ohio.

• • • SALESMEN WANTED

FRUIT TREES! Stark Bros. sensational new "Dwarfs." Also standard size, exclusive patented, trade-marked varieties produce abundant, larger, better apples, peaches, pears. All fruit faster growing, quicker bearing. Also beautiful ornamental trees and shrubs. Get giant new Colorphoto Catalog Free. Stark Bros., Dept. 30003, Louisiana, Mo.

GET INTO Million Dollar Work Clothes Business. Earn big money now, unlimited future! Sell finest-quality embroidered uniforms and work clothes to factories, garages, everybody! Huge profits possible. No experience needed. Gorgeous selling kit, actual fabric samples, including miracle Orlon! Everything Free! Write Topps, Dept. 4810, Rochester, Ind.

WRITE 3 WORDS—Collect $7.65 on 10-second demonstration to merchants—write on glass with Amazing Magic Crayon—Presto! 5 color advertising message takes fire—glows like brilliant neon. Three sales daily bring $22.95 profit. Rush postcard for details. Complete sales kit, free! Maxilume Co., 125 W. Hubbard, Dept. CL-10-S, Chicago 10, Ill.

SALESMEN WANTED in different parts of your state to call on restaurants, cigar stands, drug, grocery stores. Variety carded merchandise. Unusual profits for salesman and merchant. Request territory wanted. Old firm, AA-1 rating. Contact P. M. Laymon, Sales Manager, World's Products Co., 1007 West St., Spencer, Ind.

AD MATCHES! Sell Amazing Designs—20, 30, 40 and 240-light book matches. Bigger spot cash commissions; every business a prospect. Low prices for high quality. Repeats. Start without experience; men, women; full, part time. Buy Nothing! Sales kit furnished. Match Corp., Dept. MI-18, Chicago 32, Ill.

ADVERTISING BOOK Matches—Cash in on big demand; sell union label matches. Cuts for all businesses and political parties. Free powerhouse selling kit, low prices, protection guaranteed on repeat orders. Cash commissions. Superior Match Co., Dept. F-1052, 7530 Greenwood, Chicago.

NEW JOBS open in selling! Send name, address for five free issues of Opportunity Magazine's money-making guide, listing hundreds of companies who'll pay you well, full or part-time. No experience needed. Opportunity, 28 E. Jackson, Dept. 19, Chicago 4, Ill.

ANYONE CAN sell Hoover DuPont Nylon Uniforms for beauty shops, waitresses, doctors, nurses, others. In white and colors. Exclusive styles. Top quality. Low priced. Exceptional income. Real future. Equipment free. Write fully. Hoover, Dept. F-102, New York 11, N. Y.

POSITIVELY MAKE $50.00 a day and up selling brand new item going to every type of Food and Beverage Store, Factories, Laboratories, Hospitals, etc. Samples Furnished. Utility Durawear, 53 West Jackson Blvd., Dept. MI-10, Chicago 4, Ill.

IS $210. A week worth a postcard to you? Then rush card with name and address for special Free Trial Plan that sells amazing new Automatic Refrigerator Defroster "like hot cakes!" Write to Mr. Lewis, D-Frost-O-Matic Corp., Dept. N-101, 173 W. Madison, Chicago 2, Ill.

MAKE BIG money—season starting—sell 1953 calendars, advertising specialties and executive gift line. Experience unnecessary. Commissions advanced. Outfit Free. North American Calendar, 605-AD Washington, Chicago 6.

MAKE MONEY with fast-selling Bostonian Shirts. Blouses too. Spare time, full time. Sales Kit Free. Bostonian, 89 Bickford, Dept. R-12, Boston 30, Mass.

• • • BUSINESS OPPORTUNITIES

COIN MACHINES earn big money! Machines at $10.50 earn as high as $5.00 weekly profit. Place machines in stores, hotels, filling stations, etc., and your income starts immediately. Routes can be operated in spare or full time with no experience needed. We'll tell you how and send you a catalog describing our nut, candy, gum and postage vendors; also pinball machines, music boxes, etc. Write immediately to Parkway Machine Corporation, Dept. 15, 715 Ensor St., Baltimore 2, Md.

$5 AN HR. & more possible in your home. You Can Paint It With Suede—Fabulous new business—spare or full time. Spray on rainbow colors—Auto dashboards and trunks—Signs—Radios—Toys—Figurines—Lamps — etc. — beautified with amazing new 3rd dimensional plush-like finish with touch-appeal as well as eye-appeal. I'll send you complete, step-by-step plans and equipment, including high-velocity spray gun for no-risk examination in your own home. Send no money—just name and address. Coast, 1004-CM S. Los Angeles St., Los Angeles 15.

MAKE $6.73 EVERY Time. You sell one—and they're amazingly easy to sell! We have new Adding Machines in original factory cartons you can sell for only $14.95 and you make 45%. They're executive model portables, precision built with automatic clearance, direct subtraction, fully guaranteed. Send for life size color photo with full details. Write today to Lightning Adding Machine Co., Inc., Dept. MI-2, 1260 West Second Street, L. A. 26, Calif.

SPECIALIZED MAGAZINES will help You to success. Get latest copies through our Easy-to-Get-Acquainted Service. Hundreds of business, trade, educational, professional, hobby, craft, sport, stationery, store display, sign, taxidermy, telephone, textile, tobacco, vocational, educational, window display, woodworking, writer and others covering All interests. Send for List today. It's Free. Commercial Engraving Publishing Company, 34W North Ritter, Indianapolis 19, Ind.

EXCLUSIVE DISTRIBUTORS. Amazing new DDT-moth-resistant genuine crushed redwood cedar! Prevents moth damage to clothes, fabrics. Makes fragrant cedarized closets, drawers. Applied like paint; laboratory tested. Hardware, paint, building supply dealers, contractors buy quantities. Tremendous profit potential! Low priced; attractively packaged. Write for details. Millenco, 91 Summit, Brookline, Mass.

EARN $15,000-$30,000 ANNUALLY. Franchise protected. Guarantee minimum $12,500 or money back. Live at home. No merchandise to buy. Selfemployed. One of the most exclusive and noncompetitive businesses in United States. Send 50c for explanatory book. Money refunded when book returned. Harrell & Company, Box A-3, Louisville, Ill.

WANTED! HOME Producers, by manufacturers in our Contact Service. Become a sub-contractor, casting plastic products for these companies. Thousands of easy-to-make items required. Cash in at home without previous experience. Write for free list of 100 most wanted items. Plastic Service Assoc., Dept. MI2, East Boston 28, Mass.

MAKE MONEY At Home as renewal headquarters for all magazines. Big Christmas sales profits now. Liberal commissions. Supplies furnished. Write for Free Catalog. McGregor Magazine Agency, Dept. 520B, Mount Morris, Ill.

ALL PROFIT: Get manufacturer's, distributor's, dealer's profits yourself by making, selling, installing important heating specialties. Details free. Harrington, Box 103CF, St. Matthews, Ky.

SPARE TIME Business! Sell colorful Decalcomania Home Decorations for kitchens, bath, nurseries, gifts, etc. Friends, neighbors buy on sight. Millions sold every year. Start earning real money now. Up to 100% profit. Send postcard for sales plan plus test assortment on approval. Send no money. Decal Art Co., Dept. X10, 344 N. Lorel, Chicago 44, Ill.

BRONZED BABY Shoe mountings, supplies, and equipment. Plating assemblies, all types and sizes. Save 50% and more on slightly used units. Instructions. Free Catalogs. We buy used plating equipment. Send description. Hollywood Bronze Supply, Dept. F, 1624 E. First Street, Los Angeles 33, Calif.

EARN $10.00 PER Hour At Home! Supply Invisible Reweaving to laundries, cleaners, stores, homes. Make holes, tears, burns disappear from all fabrics! We'll make you a high-priced expert in weeks! Details Free. Fabricon, Dept. R-7, 8342 S. Prairie, Chicago 19, Ill.

COLORGLAZED CONCRETE pottery made without molds. Patented method. Cemetery products, novelties, tiles. Basement leaksealing. Money-making projects. Booklet, details free. Men only. National Pottery, Grand Rapids, Minnesota.

BE INDEPENDENT, be secure, have your own profitable business—earn $20 and more a day making beautiful, fast-selling lamps at home. No equipment needed. Illustrated course teaches you quickly. Course, parts catalog, wholesale price list—only $2. Gearon Co., Dept. 200-C10, 27 S. Desplaines, Chicago 6, Ill.

IMPORT-EXPORT! OPPORTUNITY, profitable, world-wide, mail-order business from home, without capital; or travel abroad. Established World Trader ships instructions for no-risk examination. Experience unnecessary. Free details. Mellinger, 7A, Los Angeles 24.

VENDING MACHINES—A post card may bring you the opportunity you are waiting for. No experience necessary. Stamps, nut, candy, gum and others. Small investment. Write Schoenbach Enterprise, Dept. 12, 1645 Bedford Ave., Brooklyn 25, N. Y.

LEARN SEWING Machine Repair, Electrify, Rent, Sell Spare Time. Make "Big Money" like our other Men-Women do. New machines, motors, parts wholesale. Details free. Taylor Service, Hamilton MI-10, Ohio.

GOOD PAYING Business silvering mirrors, plating autoparts, reflectors, bicycles, bathroom fixtures, etc., by late method. No tanks or shop required. Outfit furnished. Free Booklet, Gunmetal Co., Ave. A, Decatur, Ill.

WATERLESS HAND Cleaners. Highly profitable home mail order and mfg. business. Simply add water to concentrates or ready-packed under your own label. Everything furnished. Western H. Aircraft, Los Angeles 19.

LEARN PIANO Tuning, Repairing—at home in 30 days. Unlimited Income. Phonograph recordings, tools and instructions furnished. Write Capitol City Tuning School, Dept. 1045, 129 E. Michigan, Lansing 16, Mich.

THROWN AWAY! Tons of ground rubber by recappers. Make into Plastic Rubber. 1000 uses! Easy! Inexpensive! Start profitable business! Instructions, samples $1.00. Ceeten Products, 506-B, Cornelia, Ga.

PROFITABLE HOME business, electroplating novelties, giftwares, autoparts, mirrors. Easy, inexpensive home processes. Free booklet. Tyco, Box 13231-DC, Houston 19, Texas.

START MAILORDER Bookshop—Build your future. 25c brings booklet, samples, exciting ideas. General Publications, Ossining 4, N. Y.

CLASSIFIED ADVERTISEMENTS

INVISIBLE REWEAVING—big profit, big demand, easy to learn with low-cost complete course—nothing else to buy, ever. Details free, write today: Fabricon R-7, 8342 S. Prairie Av., Chicago 19, Ill.

BIG MONEY and fun growing Live Miniature Ming Trees on your window sill. Write for Free rare tree seed and plan. National Nurseries, 8463-D South Van Ness, Inglewood 4, Calif.

START A Venetian Blind Laundry. Profit opportunity for lifetime business. New machine method. Free booklet on request. F. E. Co., 442 N. Seneca, Wichita 12, Kans.

TO $35.00 WEEKLY. Spare Time, Home Operated, Mail Order Business. Successful Small "Beginner's" Plan. Everything Supplied. Lynn, 10420-X National, Los Angeles 34, Calif.

RAISE PHEASANTS on the $100 week plan. Little capital and space can make you independent. Free details. Great Central Game Management System, Columbus 16, Kan.

BUY WHOLESALE thousands nationally advertised products at big discount. Sent free "The Wholesale Plan." American Buyers' Service, 631-MI Linden, Buffalo, N. Y.

MONEY IN New Greaseless Doughnuts. Start in kitchen. No smoke. Sell stores. Free recipes. Irving Ray Co., 3605 South 15th Ave., Minneapolis 7, Minn.

LIQUID RUBBER, Make Flexible Molds. Quart $2.95, ½ gallon $4.75, gallon $8.50 (prepaid). Chaney, 1130 E. 16th St., Jacksonville 6, Fla.

EARN EXTRA money weekly mailing circulars for advertisers. Complete instructions 25c. Siwaslian, 4317-A Gleane Street, Elmhurst 73, N. Y.

LEARN METALIZING baby shoes, jewelry, gifts. Bronze, gold, silver. Complete success plan free. Kiktavi Building, 7217-MI South Broadway, Los Angeles 3.

EXTRA MONEY—No Selling—operate vendors. Amazing profits, details Free. Silver King, Suite 222, 622 Diversey, Chicago 14.

"MAKE PERFUME" Profitable Mailorder Business. Catalogue Free. "International," 6347 Parnell-MI-10, Chicago 21, Ill.

START OWN Business—home, office; booklet describing "137 Business Plans" free. Elite Co., 220-G Grand Street, New York 13, N. Y.

MAKE TOUGH, Durable Plastic—1c pound. Makes attractive floors, walls, built-ins, roofs. Build good home, $150.00 room. Bays Laboratory, Oklahoma City 9.

FOR AN extremely profitable lifetime business, operate a Collection Agency. Quickly learned. Write Cole Associates, Syracuse 2-MI, N. Y.

BUILD OWN Business. New repeat product. Every home needs. Unusual proposition and sample 25c. Gordin Publishers, Box 23, Pawtucket, R. I.

EARTHWORM BREEDING? First, get unusual story, "An Earthworm Turned His Life." Free. Earthmaster, Dept. 4, El Monte, Calif.

EARN $1000.00 MONTH Operating Bookkeeping-Tax Consultant Service. Details Free. Universal, Box 664-D, Springfield, Mo.

BUY IT Wholesale! Manufacturers, distributors offer 850,000 items. Literature free. Olsen, 1231-C East Third St., Duluth 5, Minn.

MAKE 100% PROFIT Selling Names. Send $1.00 for complete instructions. Claude V. Wiese, 1516 Franklin, Waterloo, Iowa

TIN-CANS. TURN Them Into Cash. Nine methods. Instructions 50c. Charles Company, 12-GAH, Norwood, Ohio.

ADDRESS ENVELOPES, Postals, at home—longhand, typewriter. Particulars 3c stamp. J. Torrey, Melrose 76, Mass.

FIGURINES UNPAINTED. Free illustrated catalog. Haverty Products, 822-M 17th Street, Altoona, Penna.

BOOK "505 ODD, Successful Businesses" free. Work home! Expect something Odd! Pacific-23C, Oceanside, Calif.

$46 FROM SQUARE Foot Plywood. Jigsaw necessary. Write, Woodarts, Bridgewater, Mass.

"PROFITABLE DECORATING Business." Fascinating! Instructive. Only $1.00. Fran Council, Box 150-A, Wildwood, N. J.

$200. WEEKLY REPORTED! No selling. Free booklet. T. J. Surface, Roanoke 4, Va.

MAKE FLEXIBLE Molds! Cast plaques, bookends, figurines! Free sample! H. Tooker, 630-E Chestnut, Hamilton, Ohio.

MONEYMAKING OPPORTUNITIES Literature Free. National Hobbies, Box 524, Rochester, Minn.

HOW AND where to obtain Capital? Free details, Star Service, Wapakoneta, Ohio.

MAKE PERFUMES At Home. Write, "Carey Laboratories," 1914 Chouteau MI-10, St. Louis 3, Mo.

MAKE MONEY addressing envelopes. Our instructions reveal how. Paul Glenway, 5713 Euclid, Cleveland 3, Ohio.

FORMULAS—ALL Kinds—Real Moneymakers. Catalog Free. Kemico, Park Ridge 60, Ill.

INCOME FROM local information. No selling. Write Neherco, La Verne 2, Calif.

RECAST OLD batteries into new. Latest Achievements. Battery Laboratories, Minneapolis.

PRINT WITHOUT a printing press! Big Profits! Dept. 310. See page 37.

START BUSINESS Without Capital! Reliance, 15-F Park Row, New York 38, N. Y.

EASY MONEY From Newspaper Clippings. Siegel, Box 183-MI, New York 2.

• • • MONEYMAKING OPPORTUNITIES

MEN! MAKE extra money in your spare time. No house-to-house canvassing required. New Car given as bonus. Amazing nylons guaranteed as long as 9 months depending on quantity, against runs, snags, holes, or replaced free. Rush name and hose size for simple money making plan. Lowell Wilkin, 18210 Wash., Greenfield, Ohio.

START YOUR Own Business on credit. Your own boss. 1586 of our Dealers sold $5,000 to $27,500 in 1951. We supply stocks, equipment on credit. 200 home necessities. Sales experience unnecessary. Pleasant, profitable business backed by world-wide industry. Write Rawleigh's, Dept. J-U-MOM, Freeport, Ill.

ADVERTISING BOOK Matches—Cash in on big demand; sell union label matches. Cuts for all businesses and political parties. Free powerhouse selling kit, low prices, protection guaranteed on repeat orders. Cash commissions. Superior Match Co., Dept. FX 1052, 7530 Greenwood, Chicago.

SCHOOL SENIORS—Earn sensational profits selling classmates America's most beautiful Graduation Name Cards. Largest Selection. Outsells all others. Free Sample Kit. Printcraft, Dept. I, 1509 Maple St., Scranton 5, Penna.

$10,800 PROFITS! YOUR Own Mailorder Business! No Capital Risk! "Success Plan" (worth $2) Free! Write today! Treasury, 149 Storer, New Rochelle MX-11, N. Y.

VENDING MACHINES—No selling required. Send for Free 32-page illustrated catalog describing our numerous coin machines; also showing you how you can earn Amazing Profits either full or spare time. Parkway Machine Corporation, Dept. # 5, 715 Ensor St., Baltimore 2, Md.

WORK FOR U. S. Gov't.! Men-Women. Start high as $73.00 week. 95,000 jobs open! Qualify Now! Experience usually unnecessary. Get Free 32-page book showing jobs, salaries, requirements, sample tests. Write today: Franklin Institute, Dept. N-28, Rochester, N. Y.

GROW MUSHROOMS. Cellar, shed, and outdoors. Spare, full time, year round. We pay $3.50 Lb. We paid Babbitt $4,165 in few weeks. Free Book. Washington Mushroom Ind., Dept. 102, 2954 Admiral Way, Seattle, Wash.

START A buying service, buy wholesale thousands nationally advertised products. Make big profits selling at sizable discounts. Send postcard for details. American Buyers' Service, 628-MI Linden, Buffalo, N. Y.

HOW TO get your mail order advertising Free revealed by famous expert. Also other "inside" secrets. Free details. Benson Barrett, 1751-C2 Morse, Chicago 26.

DETECTIVES EARN Big Money. Experience unnecessary. Detective Particulars free. Write, George Wagoner, 125-J West 86th, New York 24.

SELL TITANIA Gems: $9.75 Carat Wholesale. More brilliant than diamonds. Free catalog. Diamonite, 1404-B Mitchell, Oakland 1, Calif.

TIE-BREAKER PICTURE puzzles exposed, $2.00. Wenograde, Box 1495, Phila. 5, Penna.

$100-$200 WEEKENDS NO selling or manufacturing. Brennan, 4025-W Lankershim, North Hollywood, Calif.

FREE BOOK "505 Odd, Successful Businesses." Work home! Expect something Odd! Pacific-22C, Oceanside, Calif.

BE APPOINTED State Notary Public Now! Details: Stationers, Helotes 50, Texas.

• • • HELP WANTED

FOREIGN & LATIN American Employment. 1952 "Foreign Service Directory" gives Up-To-Minute Facts on Military & Civilian Construction, Government Jobs, Major Oil Listings, Aviation, Transportation, Steamship Lines, Mining, Importers, Exporters, How-When-Where to apply, application forms, Hot List Firms Hiring. $1.00 postpaid. Global Reports, P. O. Box 883-MI, Hollywood 28, Calif.

ALASKA—LAST American Frontier. $1.00 brings 1952 Business Directory, Government Map, Construction Projects Military & Civilian, Homestead & Highway facts, Hunting-Fishing-Game Rules, Mining, Aviation. List of firms hiring. How-When-Where to apply. Alaska Opportunist, P. O. Box 883-MI, Hollywood 28, Calif.

FOREIGN EMPLOYMENT construction men, building trades, helpers, office men, others, interested in foreign projects. High wages, quarters, transportation. Send $1 for foreign construction compendium and application forms. Foreign Service Bureau, Dept. MI-10, Metuchen N. J. (Not an employment agency—No fees.)

MEN-WOMEN. JOIN The Merchant Marine. Experience unnecessary. Foreign travels. Excellent pay. Excitement. Information Free. Davenport's, 1170-C3 Broadway, New York 1, N. Y.

SHINE SHOES Without "Polish." New invention. Lightning seller. Shoes gleam like mirror. Samples sent on trial. Kristee 176, Akron, Ohio.

FOREIGN JOBS. Contracts underway and soon starting in Africa, South America, Canada, England, Europe, South Pacific, Middle East, Mexico and Alaska. Send $1.00 for foreign job news, information, application forms, etc. DCS Foreign Job News, Dept. 268-AR, Bridgeport, Ill.

WANT A Job Overseas? Big pay, expenses. How, when and where. Mechanical, clerical, professional workers, most all trades. Make your stake now. Send $1.00. Application forms will be included. Overseas Jobs, Dept. 335-DI, Baton Rouga, La.

ALASKA. CONSTRUCTION workers note. Electricians, Plumbers $3.50, Laborers $2.73, hourly. Instructions & Application Blank $1.00. Mico, Box 656, Bellevue, Wash.

CONSTRUCTION JOB List. Published Monthly. $1.00. Dempster's Construction Scout News, Dept. 268-AQ, Bridgeport, Ill.

• • • PROFITABLE OCCUPATIONS

SEND FOR big, new 1952 illustrated catalog that will show you how to turn your spare time into cash—making quick-selling, highly profitable lamps. Every home a prospect. Hundreds doing it—you can, too. No experience or special tools required. Catalog No. 7 contains 56 pages filled with shades, shade frames, figurines and bases, oil lamp converters, boring compound, and dozens of similar items. Also all kinds of sockets, cords, pipes, harps, finials, bases, and hundreds of other parts—everything you need. Special 8-page section shows 6 beautiful lamps in kit form—ready to assemble. You buy wholesale, sell at retail—make Big profits. Send 25c today for new 1952 catalog and wholesale price list—you'll be glad you did. The 25c will be refunded on your first order. Gearon Co., Dept. 500C10, 27 S. Desplaines, Chicago 6, Ill.

"HOW TO Make Money With Home Workshop" describes amazing methods used by hundreds of successful craftsmen. Tells what to make. How to sell workshop output spare time. Write at once for details. Craftsman, 115-B7 Worth Street, New York City.

WANT A Diesel Job? New Opportunities to increase income. Higher Pay. More Money. We can help you Qualify. Tools. Shop method home training. Write today! Diesel, Tractor, Heavy Equipment Division, Interstate Training Service, Dept. 4K, Portland 13, Ore.

START A buying service, buy wholesale thousands nationally advertised products. Make big profits selling at sizable discounts. Send postcard for details. American Buyers' Service, 627-MI Linden, Buffalo, N. Y.

MAKE BIG money now with marvelous new Rolit Knife Sharpener. Big profits. Full or spare time, side line. Protected territory. Write today: Alden Speare's Sons Co., 136A Sixth St., Cambridge 42, Mass.

THRILLING, PROFITABLE Home Business. Make fast-seller chenille monkey trees, dolls, flowers. Terrific holiday demand. Information free. Velva, Bohemia 14, N. Y.

YOU CAN earn money easily At Home securing subscription by addressing and mailing Our Literature. Details free. Addressed envelope appreciated. W. E. Martin, Lawsons St., Martinsville, Va.

EARN UP to $400 Monthly Raising Angora or New Zealand Rabbits. Plenty Markets. Particulars Free. White's Rabbitry, Newark, Ohio.

PLASTIC FLOORING, formula and instructions for laying $5.00. Art Penny, First St., Port Credit, Ont., Can.

$5000 FROM HALF acre growing Ginseng, crop bought, Particulars 10c. Associated Growers, Sperling, Manitoba.

SAIL HO! Be a merchant seaman. Enjoy world travel, Big pay. Send Now for Free information. Seaway, Box 1231, Baltimore 3, Md.

DETECTIVES—MAKE Secret Investigations. Interesting occupation. Write, George Wagoner, 125-J West 86th, New York 24.

$40.00 WEEKLY, MADE growing mushrooms, Fresh, Dried, Dominion Patent 331583. Free Spawn. North American, 169M Yonge, Toronto, Canada.

MUSHROOMS GROWN Boxes Barrels. Manureless process 50c. Spawn $1.00. Gordins, 553 William, Winnipeg, Manitoba.

MAKE MONEY screen printing religious mottoes. Get exciting details. Joe Jones, Box 321, Meridian, Miss.

BOOK "505 ODD, Successful Businesses" free! Work home! "Odd"!! Pacific-24C, Oceanside, Calif.

PRINT WITHOUT a printing press! Big Profits! Dept. 310. See page 37.

• • • BARGAINS

1000 CLEAN, SMOOTH Shaves From One Blade! Sensational new stropper automatically turns blade on genuine pigskin strop having honing and stropping sides. Keenly sharpens any make single or double-edge blade quickly, easily, safely. Guaranteed! $2.95 Postpaid, or send for free details. Rowan's, 2351 Linden Avenue, South Plainfield 2, N. J.

DRESSES 24c; SHOES 39c; men's suits $4.95; trousers $1.20. Better used clothing. Free cat. Transworld, 164-AB Christopher, Bklyn. 12, N. Y.

BEST BARGAINS Yet! Rush dime. Get shop tool plus big surprise lists. Satisfaction guaranteed. c/o Matco, 1240 Delaware, Buffalo 9, N. Y.

PARACHUTES, GOVERNMENT Surplus White Nylon. $1.00 prepaid. Parachute, Box 483, General Square Station, Jersey City, N. J.

• • • CANDY MAKING

MEN-WOMEN — "EVERYBODY Likes Candy." Learn to make professionally at home. Tools and supplies. (Our 42nd year.) Ragsdale Candies, D3, East Orange, N. J.

• • • CHEMICALS & SUPPLIES

LABORATORY APPARATUS, Chemicals, Microscopes, Complete Chemistry Sets, Minerals, Uranium Ore. 10c brings catalog. Porter Chemical Company, Hagerstown 3, Md.

• • • FORMULAS, PLANS

500 FORMULAS AND Recipes. Riches in recipes. Tried and tested processes for home, factory and workshop. 25c postpaid. Allen, 427-FM, Clinton, Mo.

SUPERB ALL-PURPOSE Soap. Easily made, requires no heat. Money maker. For formula send $1.00 to A. L. Cole, Linden, Mich.

REAL MANUFACTURING formulas. Lists free. W. Cummings, Chemist, 228 Gordon Ave., Syracuse, N. Y.

LABORATORY TESTED Formulas. Lists Free. Pont Chemical Company, Terre Haute 3, Ind.

FREE FORMULA Catalog. Latest money makers. Western Chemical, Salem, Ore.

• • • TREASURE FINDER

SELECTIVE METAL and mineral detector. Revolutionary design. Distinguishes metals from black magnetic sands. Readily detects metals under salt water. Free literature. Gardiner Electronics Company, Dept. 42, 2018 N. Dayton, Phoenix, Ariz.

TREASURE FINDERS for gold, silver and minerals. Money back guarantee, best available. Also Geiger counters for uranium prospectors, free information. Write Goldak Company, 1546 West Glenoaks, Glendale 1, Calif.

TREASURE-MINERAL LOCATORS—Geiger Counters, extra light weight, ultra-sensitive, lowest cost, credit purchase plan available, factory guaranteed free illustrated literature. Fisher Research Laboratory, Inc., Palo Alto, Calif.

GOLD AND Silver Detectors, Geiger Counters for Uranium. Mineralights. Powerful—Sensitive—Guaranteed! Free information. Detectron Co., 5631 Cahuenga, North Hollywood, Calif.

• • • ADJUSTING SERVICE

$4 TO $10 HOUR Spare time in billion-dollar Adjustment field. Free Book—Now! Universal Schools, D-103, Box 8202, Dallas 5, Texas.

• • • OFFICE SUPPLIES

TYPEWRITERS $22.50, DUPLICATORS, Adders $12.95. Meier's, 118 Spruce, Wichita, Kans.

• • • PRINTING, MULTIGRAPHING, MIMEOGRAPHING

125 8½ x 11 LETTERHEADS AND 125 Envelopes $2.00 postpaid. 24 hour service. Samples free. Catalpa Press, 5519 N. Clark, Chicago, Ill.

100 LETTERHEADS, ENVELOPES, business cards, statements—$3.00. Kregulka Press, Windsor, Vt.

• • • PRINTING OUTFITS & SUPPLIES

PRINTING OUTFITS, type, supplies. Send dime for illustrated supply book and samples. Kelsey, Inc., H-57 Meriden, Conn.

PRINTING MACHINERY. Type Supplies. Lists 3c. Turnbaugh Service, Loysville, Penna.

MAKE YOUR own self-molding rubber printing cuts. Plexirubber, Argyle 3, Wisc.

PRINT WITHOUT a printing press! Big Profits! Dept. 310. See page 37.

• • • TYPEWRITERS, DUPLICATORS

TYPEWRITER SALE! Adding machines! Save up to $20—New portables, reconditioned desk typewriters. Send 10c for catalogues. Apple, 993A Westchester Ave., New York 59, N. Y.

• • • STAMP COLLECTING

WE GIVE Away—Your Choice Latest Scotts Albums; Catalogue and available philatelic accessories. Realize—You Get These Worthwhile Rewards When You Buy From Our Better Foreign Approvals. Write Today For Full Particulars Sent With Trial Approval Selection. Americas' Stamp Service, Riverside 3, Calif.

CANADIAN COLLECTION—Free—Includes early Victorian Issues—Jubilees—High Values—Commemoratives—Special Issues—Newfoundlands—Pictorials, etc., etc., together with Philatopic Magazine all free. Send 5c postage. Empire Stamp Company, Dept. MM, Toronto, Can.

FREE COLLECTION—over 100 different stamps of world—commemoratives, animals, natives, ships, famous men, others all to approval buyers; also stamp albums, catalogs. Bell Stamp Service, Box 190, Dept. C-2, Bell, Calif.

1050 DIFFERENT STAMPS given to approval applicants becoming customers. Send 3c for particulars, lists and approvals. Bryson Stamp Company, Drawer FM1, Rossford, Ohio.

CLASSIFIED ADVERTISEMENTS

PAYING HIGH Prices For Approvals? If your collection numbers under 15,000 try our 1c and 2c approvals. In books of 1,000 different. Lots to choose from at lowest prices. Also special offer to customers. Clark, Box 544-N1, Muskegon, Mich.

300 STAMPS FOR Only 10c! This mammoth value includes Airmails, Pictorials; stamps from strange Countries cataloguing up to 25c each! Also approvals. Mystic Stamp Company, Camden 30, New York.

FREE—COMPLETE set of Famous Americans, Flags, Parks and Presidentials to approval buyers. Send 3c for 15 of the above stamps plus full particulars. Triboro Stamp Company, 145 Nassau Street, Dept. 310, New York 38, N. Y.

POLAR BEAR Triangle: Giant George Washington Six Colored Ecuador, Arctic Triangle, First American Commemorative. Corsica, Devils Island, Others. Everything free with approvals. Capital Stamps, Little Rock 5, Ark.

"SNAKES," RHINOCEROS, Giant, Pygmy, Emu, Kangaroos, Koalabear, Kookaburra and other fierce jungle beasts given if you request our exciting approvals. Niagara Stamp Co., Niagara-on-the-Lake 53, Can.

FREE: MINT British Colonies From Tonga, Seychelles, Brunei, Transjordan, Sarawak, Solomon Islands, Caymans, Gilbert Ellice—Free with approvals. Viking, 130-M Clinton Street, Brooklyn, N. Y.

BEAT THIS If You Can! Over 520 different stamps, catalog over $11. For only 25c to serious adult approval applicants. Free illustrated price list. Cosmophilatelist, Andover, N. J.

1/10 CATALOGUE WHILE our supply lasts on many over stocked foreign stamps. Try them on approval. Premiums on purchases. Roseland Stamp Co., Dept. 8-E, Spring Lake, Mich.

WORLD'S LARGEST Stamp (7½x14 inches). A real curiosity! Retails for 50c, only 3c to approval applicants. Tatham Stamp Co., Springfield 9, Mass.

50 DIFFERENT WORLD Wide absolutely free, just to introduce our incomparable approvals. Kent Stamp Company, Box 87, Brooklyn 2, N. Y.

FREE "STAMP Finder." Tells instantly country to which any stamp belongs. 32 pages profusely illustrated. Garcelon, Calais 10, Maine.

FREE! POWERFUL Magnifying Glass For 5c Post. Bargain lists and approvals. Jamestown Stamp Co., Dept. 229, Jamestown, N. Y.

FREE. SCOTT'S International Album. Other big premiums. Full particulars with approvals. Raymax, 68-K Nassau St., New York 38.

FREE! RARE Colorful San Marino's Columbus Pictorial Set. With temptingly-priced approvals. "MIG," 195 Park, Lewiston, Maine.

OLD SCARCE U. S. Seconds On Approval. Slight imperfections, lowest prices. Hernfelder, Clintonhill Sta., Newark 8, N. J.

307 ALL DIFFERENT—Only 15c! Beautiful collection: Commemoratives, Triangles, High Values, Bicolored Stamps, etc. Garcelon, Calais 475, Maine.

1,000 UNIQUE COLORFUL attractive mounted stamps 1c—2c each. Rushed. Niagara Stamp Co., Niagara-on-the-Lake 73, Can.

U. S. ARMY & Navy Heroes on Stamps; 10c with United States approvals. Locust, Box 205-M, Harmon-On-Hudson, N. Y.

200 DIFFERENT, INCLUDING Roosevelt triangle. 5c to approval applicants. K. Avalon Stamp Co., Springfield, Mass.

U. S. ILLUSTRATED Bargain List Free. Stone, 45 Bromfield, Boston 8-M, Mass.

FREE! POWERFUL Magnifying Glass. Jamestown Stamp, Jamestown 229, N. Y.

100 DIFFERENT STAMPS free with approvals at 60% discount. Martinsen, Box 115, New York City 33.

25 DIFFERENT U. S. Commemoratives 5c with approvals. Colonial Stamp Shop, Charlton, Mass.

50 DIFFERENT FINLAND 10c With Approvals. Carroll, 4357B Hoover, Los Angeles 37, Calif.

HOW TO Recognize Rare Stamps. Free Book Illustrated! Kenmore, Milford, H-59 N. H.

HYGRADE U. S. approvals priced to please. Weenigman, 1933 Patterson, Chicago 13.

50,000 STAMP GRABBAGS 25c each. Anderson, 630C, Bingaman, Reading, Penna.

312 MIXED U. S. only 10c to "Gold Nugget" approval applicants! Nothing like them. Kessel's, Folsom, Calif.

START YOUR Own Stamp Business. Send for free circular. Donald Shepard, Box 1147, Chicago.

½—1—2c APPROVALS. BARGAINS Galore! Cole, 43J Rinewalt, Buffalo 21, N. Y.

PHILIPPINES 25 DIFFERENT. Only 10c with colorful approvals. Moffat, 921 College, Rock Hill 1, S. C.

SOUVENIR SHEET free if you request approvals. Knight Stamps, Portland 88, Ore.

ALBUM! HOLDS over 1000 stamps!! Only 10c! Stampmart, Hartford 1, Conn.

FREE—ILLUSTRATED Catalog! Kenmore, Milford, C-59 N. H.

300 DIFFERENT 25c APPROVALS. Schmitt, 730 South Jackson, Green Bay, Wisc.

NUDES SET; Colorful approvals—10c!! Atlas, 2830-N Eisenhower, Racine, Wisc.

500 EXOTIC JAPAN Stamps—10c! Kenmore, Milford, J-59 N. H.

• • • RARE COINS

FREE! FOREIGN Coin, banknote and Coin Collectors Illustrated Catalog to approval service applicants. Send 3c postage. Tatham Coinco, Springfield 9, Mass.

BURMA NOTE and illustrated 90pp coin catalogue, 25c. Shultz, Salt Lake 10, Utah.

• • • OLD COINS WANTED

WE PURCHASE Indianhead pennies. Complete allcoin catalogue 20c. Magnacoins, Box 61-BK, Whitestone 57, N. Y.

• • • INDIAN CURIOS, RELICS, ANTIQUE FIREARMS

INDIAN RELICS Wanted. Large showy pieces, cross bows, blunder busses, Spanish coins and armor, good or bad. Indian Pictures History Book, Fla., Ga., Ala. Latin-American relics. E. G. Barnhill, Box 227, Ft. Lauderdale, Fla.

• • • HOBBIES & COLLECTIONS

5000 JEWELRY STYLES, you can easily make yourself—Pins, Earrings, Bracelets, Rings, Matched Ensembles. Instructions and Catalog—10c. Barrys, 112 Ardsley Court, Newark, N. J.

MILITARY MINIATURES For Collectors. Send 10c for illustrated catalogue of Civil War Soldiers and Custer's Cavalry. Bussler Miniatures, 69 Russell Park, Quincy, Mass.

JEWELRY MAKING can be a profitable Hobby. Send 20c for our latest illustrated catalog. Milady-Fair Co., G. P. O. Box 1328, N. Y. C. 1.

• • • EDUCATION & INSTRUCTION

WHY DON'T You Write? Writing short stories, articles on hobbies, mechanics, etc., will enable you to earn extra money. In your spare time we teach you to write the way newspaper men learn—by writing. Free "Writing Aptitude Test" tells whether you possess the fundamental qualities essential to successful writing. Write today! Approved for Veterans' Training. Newspaper Institute of America. Suite 5442-S, One Park Ave., New York 16, N. Y.

TITLE: BECOME An Accountant. No previous bookkeeping experience required. We train you at home spare time, low cost. Ask for free booklet, "Accounting, the Profession that pays." LaSalle Extension University, a correspondence institution, 417 South Dearborn Street, Dept. H 113, Chicago 5, Ill.

IT'S FUN learning a language by Linguaphone. At home, in leisure time, quickly, easily master Spanish, French, German, Russian, Japanese—29 languages by Linguaphone Conversational Method. Approved for Veterans' Training. Send for Free book. Linguaphone Institute, 145-10 Radio City, N.Y.C.

PIANO TUNING pays. Learn this profitable profession at home. Our Tonometer and mechanical aids make learning easy. No knowledge music necessary. Diploma granted. Largest and oldest school—53rd year. G.I. approved. Write for booklet. Niles Bryant School, 87 Bryant Bldg., Washington 16, D. C.

ANNOUNCING HOME Study Course In Commercial Baking. Practical basic training. Good field for those with aptitude. Nearly depression proof. Send for Free booklet, "Opportunities in the Baking Industry." National Baking School, 835 Diversey Parkway, Dept. 2047, Chicago 14, Ill.

WANT A Diesel Job? New Opportunities to increase income. Higher Pay. More Money. We can help you Qualify. Tools. Shop method home training. Write today! Diesel, Tractor, Heavy Equipment Division, Interstate Training Service, Dept. 4K, Portland 13, Ore.

EARN EXTRA Pay writing short stories in spare time. "101 Technical Pointers for Fiction Writers" shows you how to write and where to sell. Send $1.00 today for 28 big pages of proved instruction. Money-back guarantee. Gavin Gray, 1545 North Larrabee, Chicago 10.

PHOTOGRAPHY FOR Pleasure Or Profit. Learn at home. Practical basic training, long established school. Write for booklet. American School of Photography, 835 Diversey Parkway, Dept. 2047, Chicago 14, Ill.

BOOKKEEPERS! INCREASE your earnings! Operate your own simplified "Dollar-A-Week" Bookkeeping and Tax Service. Full or spare time. Details Free. No obligation. Ellis, Box 202-K, Cedar Grove, N. C.

COMPLETE YOUR High School at home in spare time with 55-year-old school. Texts furnished. No classes. Diploma. Information booklet free. American School, Dept. X728, Drexel at 58th, Chicago 37, Ill.

PRACTICAL NURSING—Learn Easily at Home, Spare Time. Big demand, good earnings. High School not necessary. Write for free facts. Wayne School, Dept. FF10, 2527 Sheffield, Chicago 14, Ill.

WRITE SLANTED short stories for extra pay in spare time. Your name and address brings full details and Free Trial training offer. Croydon Schools, 1545 North Larrabee, Chicago 10.

INCREDIBLE! LOOK under "Miscellaneous!" Bijou, Box 1727-LO, Hollywood 28, Calif.

MECHANIX ILLUSTRATED

BE A Real Estate Broker. Study at home or in classrooms in leading cities. Write for big illustrated free book today. Weaver School of Real Estate, Suite 303 Law Bldg., Kansas City, Mo.

LEARN RADIO And Mathematics At Home. Individualized instruction. New Correspondence School, Box 27, St. Johns, Brooklyn 13, N. Y.

MEDICAL LABORATORY Technicians in great demand. We train you in your own home. Catalogue free. Imperial Technical Institute, Box 973-A, Austin 65.

USED CORRESPONDENCE Courses and Books sold and rented. Money back guarantee. Catalog Free. (Courses bought.) Lee Mountain, Pisgah, Ala.

START LOCAL Study Group "Success Anonymous" mention occupation. Full-Part time. Professor Martin, Cantril, Iowa.

HIGH SCHOOL—No Classes. Study at home, spare time. Diploma awarded. Write for Free Catalog HAJ-20. Wayne School, 2527 Sheffield, Chicago 14, Ill.

BECOME EXPERT Draftsman. Booklet free. Monroe Institute, MI-10, Alton, Ill.

• • • BOOKS, PERIODICALS

MAGAZINES (BACK Dated)—Foreign, Domestic—Arts, Books, booklets, subscriptions, etc. Catalog 10c (refunded). Cicerone's, 86-22 Northern Blvd., Jackson Heights, N. Y.

BOOKHUNTERS! SCARCE, Unusual, Miscellaneous Books Supplied. Atlantic Book Service, 2F Lawrence, Charlestown 29, Mass.

BOOKHUNTERS! ALL Subjects. Send Wants! Jaher Book Service, 620-M East 178 Street, New York 57.

OUT OF Print Books. Send Wants. Bookfinder, Cincinnati 30, Ohio.

• • • AUTHOR SERVICE

I WANT New Writers to cash checks of $1 to $100 offered daily. The easiest way to write for pay. No previous experience necessary. Free Details. Saunders M. Cummings, 468-14 Independence Bldg., Colorado Springs, Colo.

BEGINNING WRITERS: Let us show you How to get $1 to $20 checks in your daily mail doing simple spare time writing. Experience unnecessary. Details Free. W. Herwell, 7016 Euclid, Cleveland 3, Ohio.

• • • RADIO, TELEVISION SUPPLIES & INSTRUCTION

BUILD 15 RADIOS—Only $1.30 Each. Experience Unnecessary. Home Radio & T. V. Course, includes Trouble-Shooting and Servicing Lessons, Radio Principals, Code Instructions, Practical Radio Building and Repair. You build and keep Receivers, Transmitters, Amplifiers, Test Equipment, Code Oscillator. All parts, tools, instruction supplied, including Radio Tester and Electric Soldering Iron. Write for full particulars and receive absolutely Free your copy of "Radio & TV Repair Guide." No obligation. Progressive Electronics Co., 497 Union Ave., Dept. MI-22, Brooklyn 11, N. Y.

MAKE SIMPLE, Tubeless, Batteryless Distance-Getting Crystal Radios. Crystal and illustrated instructions 25c postpaid. Allen, 427-M, Clinton, Mo.

TV-FM ANTENNAS. Yagi, Conical, Bow-Tie. Mounts, accessories. Lowest prices. Wholesale Supply Co., Lunenburg 3, Mass.

ELECTRONIC PROBLEMS, devices, advice. Free information. Registered Engineer, 5208-G Onacrest, Los Angeles 43.

FREE 236 PAGE 1953 Television-Radio-Electronic Catalog! World's largest stocks, lowest prices. Complete supplies for builders, experimenters, amateurs, servicemen. Latest television, radios, phonos, recorders, sound equipment. Thousands of parts, tubes, test instruments, books, diagrams. Top quality money saving values. Get yours now! Allied Radio Corp., 833 W. Jackson Blvd., Dept. 45-K-2, Chicago 7, Ill.

• • • MUSICAL INSTRUCTION

POEMS WANTED! Opportunity Knocks! Nationally Known Song Writer Composes Music to Your Song Poems. Send Poems Today for Free Examination and Free Copy of "Songwriting Secrets." Melody House, Dept. ML, Box 19007 La Tijera Station, Los Angeles 43, Calif.

SONGWRITERS: PROTECT your ideas! Do not mail material! Write for safe publisher procedure First! Song Service, Dept. MI, 333 West 56th Street, New York 19, N. Y.

YOUR WORDS And Our Music—A Winning Combination! Send poems. Free examination. Song Promotion Guild, 350-X Broadway, New York 13.

POEMS WANTED for musical setting on percentage basis. Broadcast consideration. Sooner Song Co., 22-MI North West 8th, Oklahoma City 2.

SONG POEMS wanted to be set to music. Send poems. McNeil, Master of Music, 510 MI South Alexandria, Los Angeles, Calif.

POEMS WANTED For Musical Setting. Send poems for free examination. Five Star Music Masters, 629 Beacon Bldg., Boston, Mass.

SONGWRITERS! SEND poems, songs. Music Service, MI, 243 West 72nd St., New York 23.

ELECTRIC GUITARS, accordions, amplifiers, wholesale. Free catalog. Carvin, Baldwin Park, Calif.

PLAY PIANO By Ear. $3.00. Luigs, Box 475-E, Lomita, Calif.

• • • CARTOONING

"HOW TO Make Money With Simple Cartoons"—A book everyone who likes to draw should have. It is free; no obligation. Simply address Cartoonists' Exchange, Dept. 3510-C, Pleasant Hill, Ohio.

EARN MONEY Evenings, copying and duplicating comic cartoons for advertisers. Adservice, Argyle 3-B, Wisc.

SIGN PAINTING taught at home. Test lesson free. Ben Kerns, Box 812-M, Greenville, S. C.

CARTOONISTS—ARTISTS. Where to sell. Complete market list, $1.00. "Palette," Box 6565, Balto. 19, Md.

FREE COPY. Cash buyers galore! "Cartoonist Markets Letter," La Habra, Calif.

• • • ARTIST SUPPLIES & INSTRUCTION

BE AN Artist! For free talent test write Waller Art Exchange-E, 1000 N. Charles, Baltimore, Md.

• • • TATTOOING

TATTOOING OUTFITS. Supplies. Illustrated list 25c. Zeis, 728 Leslie, Rockford, Ill.

• • • MAGIC TRICKS, JOKES, PUZZLES

LATEST MAGIC for pocket, parlor, stage. Catalog 500 tricks, only 10c. Unequalled magic service for 30 years. Douglas Magicland, Dept. 3, Dallas, Texas.

512-PAGE CATALOGUE of 2500 tricks, pocket, parlor, stage. World's Finest Magic. Send $2.00 for Catalogue (refunded first $8.00 order). Kanters, R-1311 Walnut, Philadelphia 7.

ATTENTION MAGICIANS! Magic Tricks, Books, Jokers Novelties, etc. Big Illustrated Catalog only 25c. Top Hat Magic, 529-W Main, Evanston, Ill.

BIG FUN Kit! Unusual tricks, jokes, novelties, books. Howls galore. $1.00. Johnson, 414 McRae, Wilmington, N. C.

TRICKS, FUNMAKERS, Puzzles, Novelties, Catalog 15c. Andersen's, 6815M Ardmore, Chicago 31.

16 WORLD'S BEST card tricks and catalog 25c. Sterling Magic, Royal Oak, Mich.

• • • HYPNOTISM

HYPNOTISM MADE Easy. Apply 8 simple steps in my booklet and entertain friends with hypnotic demonstrations—make them forget their names; have arms "heavy as lead"; feel "red hot metal"—many other amazing, amusing hypnotic suggestions. My complete course—in one compact book—is tried and proved. Safe and sane method. Money-back guarantee. Send $1 to Dunson, 191 Binns Blvd., Columbus 4, Ohio.

STUDY HYPNOTISM! Amazing Illustrated lessons. Simple understandable language. This course tells how practical hypnotism is performed: over telephone, on stage, conquering timidity, dominating others. Full price only $2.95, postpaid; or C.O.D. plus postage. Satisfaction or refund. Order "Hypnotism Course" today. Nelson Company, 210 S. Clinton, Dept. 2KY-3, Chicago 6.

"25 LESSONS IN Hypnotism" Complete, Illustrated. $1 Postpaid. Satisfaction or money back. Books Publishing Co., 56-B W. 24th St., New York, 10.

HYPNOTISM, SAMPLE lesson free! Write Baltimore School of Hypnotism, Dept. 210-B, 4214 Belmar Avenue, Baltimore 6, Md.

FREE HYPNOTISM Catalogue. Write: The Hypnotist, 1324 Wilshire, Hollywood 17M, California.

• • • VENTRILOQUISM

LEARN VENTRILOQUISM. 3c stamp brings particulars. Smith, Dept. 250, 801 Bigelow, Peoria 5, Ill.

• • • CHALK TALKS

TRICK CHALK Stunts. Catalog 10c. Cartoonist John Balda, Oshkosh, Wis.

• • • GAMES, ENTERTAINMENTS, AMUSEMENTS

HAVE FUN, Relaxation! Learn friendly, popular Square Dance! Easy instructions, teaches you 30 dances, quickly! Only $1.00 postpaid. Guthrie Shanks, Box 3110-A, San Francisco 19, Calif.

• • • CAMERAS, EQUIPMENT & PHOTO SUPPLIES

FREE PHOTOGRAPHIC Bargain Book packed with hundreds of sensational values in still and movie cameras, lenses and latest accessories. Super savings for you in new and used equipment. No Money Down—up to 15 months to pay. Liberal trade-in allowances, too, on your equipment. Write now for your free copy to Central Camera Company, Dept. 13L, 230 S. Wabash Ave., Chicago 4 (Photographic Headquarters Since 1899).

BUY PHOTOGRAPHIC supplies wholesale: Films, Cameras, Accessories. Free catalog. Capitol Photo Supplies, 2428 Guadalupe, Austin, Texas.

CLASSIFIED ADVERTISEMENTS

OIL COLORING photographs can be a fascinating hobby or profitable sideline for those with artistic talent. Learn at home. Easy simplified method. Send for free booklet. National Photo Coloring School, 835 Diversey Parkway, Dept. 2047, Chicago 14, Ill.

PHOTOGRAPHY FOR Pleasure Or Profit. Learn at home. Practical basic training, long established school. Write for booklet. American School of Photography, 835 Diversey Parkway, Dept. 2049, Chicago 14, Ill.

• • • DETECTIVES

PREPARE FOR career in private investigation or public law enforcement work. Write for free booklet. National Detective Academy, 257 South Spring Street, Los Angeles 12, Calif.

DETECTIVES—WORK home—travel. Experience unnecessary. Detective Particulars free. Write, George Wagoner, J-125 West 86th, New York 24.

DETECTIVE TRAINING. Phillips Secret Service System, 1917-G North Kenneth, Chicago 39, Ill.

• • • MOTION PICTURES & SOUND EQUIPMENT

8-16MM SILENT-SOUND Films. Complete rental library. All latest subjects. Free catalogue, (sample film 10c). Garden Film, 317 West 50th, New York 19.

5,000 NEW-USED 8-16MM. Silent-Sound Films. International, Dept. MI, 2120 Strauss, Brooklyn, 12.

• • • HOME MOVIES

GUARANTEED FRESH 8mm roll, magazine; 16mm roll, magazine movie films. Color, b&w. Free catalog. ESO-S, 47th Holly, Kansas City 2, Mo.

• • • AUTO SUPPLIES & EQUIPMENT

1953 EDITION. IT'S New! It's Different! Get world's largest Auto Accessory & Parts Catalog and save money. 100 pages. Over 50,000 items, including Hollywood Accessories, Hi-Speed Equipment, Rebuilt Engines, all parts and accessories for all cars and trucks. We have that Hard-To-Get part! Jam packed with bargains. Completely illustrated. Send 25c (refundable). J. C. Whitney, 1919-Z Archer, Chicago 16.

FOUR CYLINDER Henderson motor $20, 45 Harley $10, others as low as $3. Harley motorcycle $20. Four airplane tires $3, mailorder only. Send 25c for new catalogue number Fifty, just out listing the above and hundreds of other bargains in new and used midget cars, motorscooters, motors, parts, plans for homebuilders, etc. (35c by first class mail). Midget Motors Directory, Athens, Ohio.

AUTOMATIC MECHANICAL Tappets. They do for Ford, Chevrolet, Pontiac, Mercury, Buick Special what hydraulic tappets do for Cadillac. Engine is quiet, valves last longer. Money back if dissatisfied. Skinner-Moser, Dunedin, Fla.

BRAKE FLOATERS for Chevrolet, Ford and Mercury Cars insure more powerful brakes, soft pedal, cure squeal. Write Super Brake-Floater Company, 4022 West Lake Street, Chicago 24.

"HOW TO buy speed equipment without money." No Selling. Information free. Newhouse Automotive Industries, Los Angeles 22.

END BUICK Tappet trouble by installing Moser Hydraulic Tappets. Money back if dissatisfied. Skinner-Moser, Dunedin, Fla.

BUY RACING heads, dual manifolds, hot coils, etc., without money. Information free. Newhouse Automotive Industries, Los Angeles 22.

MOTORIST SAVE gasoline by Vacu-mating overrich mixtures. Fits all cars. For free particulars write Vacumatic, Dept. 1933, Wauwatosa, Wisc.

"WATER INJECTION." Airflow Needles. Economy methods. Free illustrated information. Neher Industries, La Verne, Calif.

NEVER CHANGE Your Oil. New oil filter. Thousands of users. Full details free. Department TG, Henderize, Inc., 5667 Freeport Blvd., Sacramento, Calif.

SPEED EQUIPMENT from the world's largest firm. 25c for huge catalogue. Newhouse Automotive Industries, Los Angeles 22.

PATENTED. A better motor for $3.00. Free data. Ferns Products, 8120-K Walnut Dr., Los Angeles 1, Calif.

AIR HORNS! Sirens. Bells. Whistles. Free catalog. McCanna Company, 200-MI East 21st, New York 10.

• • • AUTOMOBILES & MIDGET CARS

1953 EDITION. IT'S New! It's Different! Get world's largest Auto Accessory & Parts Catalog and save money. 100 pages. Over 50,000 items, including Hollywood Accessories, Hi-Speed Equipment. Rebuilt Engines, all parts and accessories for all cars and trucks. We have that Hard-To-Get part! Jam packed with bargains. Completely illustrated. Send 25c (refundable). J. C. Whitney, 1919-DZ Archer, Chicago 16.

SAVE—CALIFORNIA custom accessories headquarters. Buy direct from original designers. Chrome dash panels, electric push button door-trunk conversions, fender skirts, dual mufflers, lowering kits, speed-dress up equipment. 40 page catalog. Hundreds of photos—25c. Eastern Auto, 3319G South Grand, Los Angeles 7, Calif.

"SAVE 50%"—SPEED Equipment, Hollywood Mufflers, Duals, Manifolds, Racing Cams, Heads, Chrome Accessories! "Souping" Manual—Catalog 25c. (Circular Free) Dealers Wanted. Almquist Manufacturing, Milford 44X, Penna.

"HOW TO Buy A Used Car"! Over 100 easy-to-perform tests in one book. A complete Guide. Send only $1.00 to M. Kaminsky, Box 570-M, Mt. Vernon, New York. Satisfaction Guaranteed.

WANTED TO buy Custom or Antique car any location, send full particulars. Robert Meader, 1041 Territorial, Benton Harbor, Mich.

POWERCAR JUNIOR—Real Children's Auto! See details under "Motorcycles, Bicycles."

• • • HOT RODS

HOP UP, the monthly magazine that leads the field for Hot Rods, Custom Cars, Speed Secrets and Racing Information. Send 20c for sample copy or subscribe now, $2.00 year. Write Dept. MI, 530 Colorado Blvd., Glendale 4, Calif.

• • • AUTO TRAILERS

BUILD STREAMLINED House Trailer. Telescopes small for towing other models. Information, Pictures 10c. Comstock Trailers, 585 Parsons, Kans.

BUILD YOUR Own Trailer! Plans for all kinds. Illustrated Catalog 10c. Jim Dandy, 125-K, Wausau, Wis.

• • • MOTORCYCLES, BICYCLES, MOTOR SCOOTERS

RECONDITIONED MOTORCYCLES and motors. Chromium accessories. Complete stock Indian parts. Expert rebuilding. Fast Service. Indian Motorcycle Sales, Kansas City 1, Mo.

POWERCAR JUNIOR—Real Children's Electric Auto . . . Plenty of power for hills, towing wagons, etc. Catalog free. Mystic River Sales, Dept. L-10, Mystic, Conn.

"BUZZZZ" MAGAZINE. Describes, Illustrates Motorcycling Completely. $2.00 year. 20c copy. 5424-A Sawyer, Chicago 25.

• • • AVIATION

BULLET RACEPLANE. Homebuilt monoplane. Blueprints $2.00. Corbcraft, 81-M Elmerston, Rochester 20, N. Y.

• • • JET PROPULSION & ROCKETS

ROCKETS SOLID Fuel Basic Construction Manual 1.00. Rocket Research Laboratorys, Quinton, Okla.

• • • ELECTRICITY & ELECTRICAL SUPPLIES

FREE—WAR Surplus Catalog—Bargains Galore. Welders, Motors, Generators, Hydraulics, Pumps, Kits for assembling your own, other items. Save. LeJay Company, Minneapolis, Minn.

LAMPS—25c BRINGS bargain parts catalog containing instructions for electrifying oil lamps, vases, etc. Gyro Lamps, 5402M Clark, Chicago 40.

ELECTRIC PENCIL: Engraves all Metals, $1.50. Beyer Mfg., 10511-G Springfield, Chicago 43.

• • • INVENTIONS WANTED

INVENTORS: HUNDREDS of manufacturers have requested our assistance in locating marketable new products. Complete information, free. Institute of American Inventors, Dept. 50-C, 631 E Street N. W., Washington 8, D. C.

INVENTIONS WANTED: Patented or Patent Pending. 21 years' experience Promoting Inventions. National Service Bureau, 3126 Meramec, St. Louis 18, Mo.

PROTECT AND sell your inventions. Details of our unique 4-point program and list of needed inventions free. Inventors Sales, 208-Y Clinton, Oak Park, Ill.

INVENTIONS WANTED: Patented or unpatented. Tremendous manufacturers lists. 1404 Mitchell, Oakland 1, Calif.

INVENTIONS WANTED: Patented, Pending Only. Inventors Patent Exchange, Hartford 1, Conn.

• • • FOR INVENTORS

INVENTORS: LEARN how to protect your invention. Special booklet "Patent Guide for the Inventor" containing detailed information concerning patent protection and procedure together with "Record of Invention" form will be promptly forwarded to you upon request —without obligation. We are registered to practice before the U. S. Patent Office and prepared to serve you in the handling of your patent matters. Clarence A. O'Brien & Harvey Jacobson, Registered Patent Attorneys, 23A-K District National Building, Washington, D. C.

INVENTORS—IF you believe that you have an invention, you should find out how to protect it. The firm of McMorrow, Berman & Davidson is qualified to take the necessary steps for you. Send for copy of our Patent Booklet "How to Protect Your Invention" and "Invention Record" form. No obligation. McMorrow, Berman & Davidson, Registered Patent Attorneys, 138-H Victor Building, Washington 1, D. C.

PATENT SEARCHES $5.00. 48-hour airmail service. Patent Applications, Drawings and Amendments prepared. Free Record of Invention. Write Patent Engineering Service, 1404 New York Avenue, N. W., Washington 5, D. C.

INVENTORS—THIS firm is registered to practice before the United States Patent Office and is available to assist you in the preparation and prosecution of your patent application. "Patent Protection for Inventors" booklet containing detailed information and steps to take toward patent protection will be sent upon request. No obligation. Victor J. Evans & Co., 770-L Merlin Building, Washington 6, D. C.

SEARCHES—PUT your patent searches in the hands of a Registered Patent Attorney or Agent, as he qualifies to give a worth-while patentability report. Record of Invention form upon request and information on patent protection. Patrick D. Beavers, Registered Patent Attorney, 925 Columbian Building, Washington 1, D. C.

PATENT SEARCHES $5.00. 48-hour service. Lowest rates on preparation of patent applications. Invention protection forms free. Write Raymond L. Smith, 410 Bond Building, Washington 5, D. C.

PATENT SEARCHES $5.00. 48-hour service. Patent Applications and Drawings prepared. For free Record of Invention forms write Miss Ann Hastings, P. O. Box 176, Washington 4, D. C.

CUSTOM MACHINE Work. Gadgets, parts made to your drawings. Free estimate. De Weese, 420 24th Street, Longview, Wash.

INVENTORS. FOR "INVENTION RECORD" form, contact Carl Miller, Registered Patent Attorney, Woolworth Building, New York.

INVENTIONS SOLD—hundreds of manufacturers need ideas, patented or unpatented, list free. Invention Bureau, 208-X Clinton, Oak Park, Ill.

INVENTIONS PROMOTED. Patented or Unpatented. Established 1911. Write Adam Fisher Company, 582 Enright, St. Louis, Mo.

INVENTORS—SELL your invention direct to manufacturers. Without obligation write National Patent Sales Co., Dept. K, Box 370, Richmond, Va.

BE SAFE: Get temporary protection (not a patent) on your idea. Cost $2.75. Free information. Box 113, Cedarburg, Wisc.

CASH FROM Ideas. Free information. Write Grayland, 5312MI Grace, Chicago 41.

INVENTORS: NEED Help? Write Institute of American Inventors. Dept. 50T, 631 E St. N. W., Washington 4, D. C.

• • • PATENTS

PATENT OFFICE searches $5.00, including copies of nearest patents. Same reliable searches we conduct for patent attorneys. 48 hour airmail service. Protection forms free. Capitol Patent Service, Box 664-X, Washington 4, D. C.

INVENTIONS PROMOTED. Patented or Unpatented. Established 1911. Write Adam Fisher Company, 582 Enright, St. Louis, Mo.

• • • PATENT ATTORNEYS

INVENTORS—IF you believe that you have an invention, you should find out how to protect it. The firm of McMorrow, Berman & Davidson is qualified to take the necessary steps for you. Send for copy of our Patent Booklet "How to Protect Your Invention" and "Invention Record" form. No obligation. McMorrow, Berman & Davidson, Registered Patent Attorneys, 138-K Victor Building, Washington 1, D. C.

INVENTORS: INFORMATION on patent procedure furnished on request, without obligation. John Randolph, Registered Patent Attorney, 210 Columbian Building, Washington 1, D. C.

INVENTORS: LEARN how to protect your invention. Special booklet "Patent Guide for the Inventor" containing detailed information concerning patent protection and procedure together with "Record of Invention" form will be promptly forwarded to you upon request —without obligation. We are registered to practice before the U. S. Patent Office and prepared to serve you in the handling of your patent matters. Clarence A. O'Brien & Harvey Jacobson, Registered Patent Attorneys, 238-K District National Building, Washington, D. C.

INVENTORS: WHEN you are satisfied that you have invented something of value write me, without obligation, for information as to what steps you should take to secure a Patent. Write Patrick D. Beavers, Registered Patent Atty., 924 Columbian Bldg., Washington 1, D. C.

INVENTORS. FOR "INVENTION RECORD" form, contact Carl Miller, Registered Patent Attorney, Woolworth Building, New York.

C. A. SNOW & CO., 1-427 Snow Bldg., Washington 1, D. C. Registered patent attorneys. Literature mailed on request.

"INVENTOR'S GUIDE" free. Frank M. Ledermann, Registered Patent Attorney, 154 Nassau Street, New York.

• • • BUILD IT YOURSELF

"CONCRETE BLOCK Homes." 32 page booklet on how to build, $1.00. H. C. Lightfoot, Civil Engineer, Richboro 25, Penna.

BUILD INEXPENSIVE concrete blockmaker. Motor-Hand. Write. Clyde Lee, Mountain View 9, Okla.

BUILD YOUR Own "Tractor." Free information. Eltraco, D-9, Camptonville, Calif.

• • • HOME CRAFTSMEN

PARATOL SUPREME "706-G" Molder . . . newly developed compound. The toughest rubber ever made for molding purposes. Supreme molds, precision reproductions, double strength. For the operator who wants the finest. Direct to consumer prices: $2.75 per quart, one-gallon cans, $8.00, 5 gallon cans $7.75 per gallon, 4 ounce samples 50c to cover mail handling. U. S. A. only. Testworth Products Corp., Dept. G, P. O. Box 482, Itasca, Ill.

28 LAWN ORNAMENT patterns 25c. Other patterns: 15"-20" high; Dutch girl; Dutch boy, pirate, bull terrier, Mexican girl, Mexican boy, dwarf, penguin, flower girl, 10c each; 3 for 25c. 25 novelty patterns 30c. All 62 full size patterns $1.00 postpaid. Strother, Box 128-YT, Belington, W. Va.

"PRACTICAL PAINTING, Wood Finishing" shows how to get professional results. Furniture finishing, workshop projects, home decorating. Complete Modern brush and spray methods. Tricks you've never seen. Write Home Craftsman, 115-F Worth St., N. Y. 13.

LEATHERCRAFT FOR Pleasure Or Profit. Make easy-to-assemble purses, belts, gloves, woolskin toys, 100 other items for gifts or to sell. Send 10c today for big catalog. Largest Leathercraft stock in U. S. J. C. Larson Co., 820 S. Tripp, Dept. 2552, Chicago 24.

JIGSAW OWNERS Attention! Start earning money at home cutting out wooden novelties and souvenirs. Write H. Cook, Dept. B, 4407 S. Normal Ave., Chicago 9, Ill.

89 FULL SIZE Jig Saw patterns of beautiful shelves, ornaments, toys, novelties. Plus "How, Where to Sell." Only $1.00. Mastercraft 104X, 7041 Olcott, Chicago 31, Ill.

OUR BIGGEST Leather and Craft Catalog yet! 1000's of items. Send 25c (refunded with 1st order). Russo Handicraft Supplies, Dept. 10X, 245 S. Spring, Los Angeles, Calif.

LEATHERCRAFT, COPPER Tooling, Textile Painting, Beadcraft, Shellcraft. Many other crafts. Big Free catalog shows everything you need. Kit Kraft, 7373 Melrose, Hollywood 46, Calif.

WILD ANIMALS! Ancient locomotives! Six-foot train! 34 quality Jigsaw Wall Patterns, 50c! Pauls Plans, 2233A No. 35, Milwaukee 8, Wisc.

CLEANEST FINE white Wiping Waste big Five Pound box $3.00, postpaid satisfaction guaranteed. Abbeon Supply, 179-23 Jamaica Avenue, Jamaica 32, N. Y.

BUILD YOUR Own Power Tools. Save 90%. Handbook 25c. Robert Fellows, Caledonia 3, N. Y.

• • • FOR THE HOME

FREE "TRUE-TO" 1952 election souvenir scroll of Eisenhower, MacArthur or Truman. If you're one of first 10% to order, we'll refund your 50c. After Nov. 6 send name of choice and 50c to: "True-To" Souvenir, 1326 R. E. Lee St., Mobile, Ala.

• • • MODELS & MODEL SUPPLIES

BUILD MINIATURE homes with our accurately-scaled materials. Send 25c for booklet and samples. Architectural Model Materials, Inc., Dept. J-102, 4208 Armitage Avenue, Chicago 39.

SHIP AND Yacht Model Fittings. Send 25c for 40 page illustrated catalog. A. J. Fisher, 1002-B Etowah Ave., Royal Oak, Mich.

STAGECOACH, SURREY, Horses. 20 kits. Folders 10c. Sample Buckboard $1.00. Tontz County Store, Elsinore 11, Calif.

• • • PLASTICS

10 LBS. PLEXIGLAS For $5. Assorted sizes and thicknesses of clear and colored Plexiglas shipped express collect. Send $5 with order to world's largest plastic sign manufacturer. Neon Products, Inc., Lima, Ohio.

NEW LIQUID Casting Plastic. Clear, colors. Embed flowers, insects, coins. Saw, drill, carve. Send 25c for Wholesale Catalog and New Sales Manual showing how to make money at home. Castolite, Dept. L-104, Woodstock, Ill.

LUCITE, PLEXIGLAS. Any size sheets, masked. Square foot (12 x 12) cost, 1/16", $1.09; 1/8", $1.40; 3/16", $1.75; 1/4", $2.08. Include 10% postage. Almac Plastics, 230 Fifth Avenue, New York 1, N. Y.

PLASTIC, SHEETS, rods, tubes, etc. Free list. Plastic Supply Co., 2901 N. Grand Blvd., St. Louis 7, Mo.

• • • SPORTING GOODS

AMMUNITION, AMERICAN-FOREIGN and obsolete. New guns. Dime for list. Central Sports, Delphos 25, Ohio.

5000 BARGAINS, FIREARMS, Binoculars. War Relics. Catalog 50c. Smith Armory, Runnemede, N. J.

SHOTGUNS, RIFLES, revolvers, over 500 modern, obsolete, list 10c coin. Ed Howe, 28 Main, Coopers Mills, Maine.

• • • BOATS, OUTBOARD MOTORS

MARINE CONVERSIONS for Ford and Jeep engines. Catalog 10c. Lehman Manufacturing Company, 972C Broad Street, Newark 2, N. J.

NEW, USED, rebuilt marine motors. Marine conversions, fittings. FREE catalog. Stokes Marine Supply, Dept. 21, Coldwater, Mich.

CLASSIFIED ADVERTISEMENTS

FULL SIZE cut to shape patterns, blueprints, $3.75 up. Pleasure boats, to 38 feet. Illustrated "Build a Boat" catalog, 25c. "How to Build Boats" book $1.00. Polywog Houseboat Plans, $10. Marine Catalog $1.00. Cleveland Boat Blueprint Co., Dept. A-23, Cleveland 13, Ohio.

MARINE CONVERSION parts, most complete line on market. Water cooled exhaust manifolds, water pumps, transmissions converted, marine reverse gears, etc. Barr Marine Products, 2708 E. Castor Avenue, Philadelphia 34, Penna.

PLANS: INBOARD-OUTBOARD runabouts, cruisers, sail. Wood, plywood, welded steel. Advise requirements. John B. Clark, N. A., 329 Kenmore, Bay Village, Ohio.

• • • BINOCULARS, TELESCOPES, MICROSCOPES

WAR SURPLUS Bargains, Binoculars, Telescopes, Sextants, Millions of Lenses, Prisms, Reticles, Eyepieces, Objectives, etc. Mail 10c for Big "Catalog CB." Send $1.00 for Stock CB—10-piece Lens Kit and Big Instruction Booklet. Edmund Scientific Corp., Barrington, N. J.

POWERFUL TELESCOPES Easily Made. Lenses, erector, focusing tube, instructions for making 400 power telescope $5.00. Or complete telescope with tripod brings object 13 times closer and 150 times larger $7.00. Telescopic Camera Co., Manorville 7, N. Y.

POWERFUL ASTRONOMICAL telescopes easily made. Perfect lenses and instructions; 100X $3.00; 100X and 200X $4.00; 100X, 200X and 400X $6.00. Full power, clear vision. Instructions alone 10c. Suffolk Science, Riverhead, N. Y.

"FREE" CATALOGUE! Thousand war surplus optical bargains. Lenses, Prisms, Telescopes, Binoculars, etc. Send $1.00 for 10 lens Hobbyist Set and Project booklet. R. Jaegers, 691 West Merrick Road, Lynbrook, N. Y.

BINOCULARS, TELESCOPES, microscopes. Our 20th year of leadership in optical values. Bargain catalog free. Brownscope Co., 24 West 45th Street, N. Y.

BUILD YOUR Own Microscope. 200 Power, Complete Castings, Mounts, Lenses, Screws, Instructions. Kit $17.50. Free Illustrations. Esco, 911 Willow, Hob., N. J.

SAVE! FREE 36 page, 3 color binocular catalog. 60 different models. United Binoculars A-572, 9043 S. Western, Chicago 20.

REFLECTING TELESCOPES, 60X completely assembled $29.75. Guaranteed observatory clearness. Free information. Skyscope, 475 Fifth Avenue, New York 17.

REFLECTOR TELESCOPE kits, refractors. Free illustrated bulletin. Esco Products, 911 Willow Ave., Hoboken, N. J.

• • • BODY BUILDING—ATHLETIC EQUIPMENT

BARBELLS, EXERCISE equipment. Courses. Free booklet. Good Barbell Co., Reading, Penna.

• • • FLOWERS, SHRUBS, TREES

CORSAGE MAKING Materials. Flower Arrangers' Supplies. House Plant Helps. Artificial Flower Parts. Free Catalog. Floral Art, Dept. MIJ, Teaneck, N. J.

• • • REAL ESTATE, FARM LANDS

CALIFORNIA RANCH Lands. Seized and sold for taxes. 50c to $5 acre minimum bid. 10c brings illustrated land catalog, outline maps. Tax Land Sales, Box 2350 BZ, Hollywood 28, Calif.

CALIFORNIA LAND! The surge of population westward gave California 50% population increase in the past 10 years. This makes land values soar. We search out land you may acquire with small steady payments; as little as $50 down. Many say: "Better than money in the bank!" Our free pamphlet may be your future fortune. Write for it today! Farm and Ranch Service Co., 7075 Hollywood Blvd., Los Angeles 28, Calif.

• • • HORSE TRAINING

"HOW TO Break And Train Horses"—A book every farmer and horseman should have. It is free; no obligation. Simply address Beery School of Horsemanship, Dept. 11510-C, Pleasant Hill, Ohio.

• • • RABBITS—HAMSTERS

A PRACTICAL Beginning To Successful Rabbit Raising. 48 Page Illustrated Booklet. Dime. American Rabbit Breeders Association, 55 AR&CBA Bldg., Pittsburgh, Penna.

STEADY EARNINGS With Angora Rabbits. Free illustrated booklet tells how, lists markets, successful raisers. Angoraville, 170 E. Butler, West St. Paul, Minn.

EARN UP To $400 Monthly Raising Angora Or New Zealand Rabbits. Plenty Markets. Particulars Free. White's Rabbitry, Newark, Ohio.

MAKE BIG Money! Raise Chinchilla Rabbits. Cash Markets Supplied. Write Today! Rockhill Ranch, Sellersville 48, Penna.

RAISE GUINEA Pigs. Amazing profits. Free Booklet. Taylors, B426E, Hapeville, Ga.

• • • ANIMAL BREEDING

MAKE MONEY raising angleworms. 25c and this ad brings you information. 25c deductible on first order. P. O. Box # 2, Garvey, Calif.

RAISE FISHWORMS. Complete instructions .25c. Huffman's Worm Ranch, Rives Junction, Mich.

• • • PETS FOR SALE

NATURALIST'S CATALOG 10c. 200 Mealworms $1.00. 35 Jumping Beans $1.00. Chameleon 55c. Quivira Specialties Topeka 35, Kans.

• • • PERSONAL

"HOW CAN I Find Out?" You can! Information discreetly developed. Any matter, person, problem, anywhere. Worldwide. Officially licensed, bonded service. Established 1922. Reasonable. Confidential. William Herman, 170 Broadway, New York.

"HOW CAN I Find Out?" You can! Information confidentially developed. Any matter, person, problem. Worldwide. Officially licensed. Established 1922. William Herman, 170 Broadway, New York.

YOUR LEATHER Jacket Renovated expertly. Free circular. Berlew Mfg. Co., Dept. 13, Freeport, N. Y.

NEED GIFTS? Literature free. Samples extra special 30c. Schollmeyer, Box 48, Brooklyn 25, N. Y.

"INTERESTING MAILS"—25c keeps your mail box full three months. Bentz, Jr., Desk H/41, Chatawa, Miss.

MEXICAN LAW. General Practice Attorney, 1203 Arizona St., El Paso, Texas.

• • • JEWELRY

RHINESTONES, JEWELRY settings, cameos, sequins, beads. Send 10c for Illustrated Catalog. J. & M. Novelties, Dept. CL-5, Griffith, Ind.

• • • REMAIL SERVICE

FOOL YOUR Friends. Letters remailed from Canada—.35c, 4-$1.00. Spence Read, Box 861, St. Marys, Ontario, Can.

LETTERS REMAILED 25c. Also private receiving address. Monthly rates. Shanks, Box 3110-A, San Francisco 19, Calif.

CHICAGO REMAIL 25c. T. Roche, 6027 S. Harper, Chicago 37, Ill.

• • • MINERALS, PRECIOUS STONES

MINERALS ANALYZED by former states geologist. Prospecting & Geophysical Office, 38-14 218th St., Bayside, Long Island, N. Y.

• • • MISCELLANEOUS

OUTDOOR TOILETS, Cesspools, Septic Tanks cleaned, deodorized with amazing new product. Just mix dry powder with water; pour into toilet. Safe, no poisons. Save digging, pumping costs. Postcard brings free details. Burson Laboratories, Dept. E-52, Chicago 22, Ill.

"LIVING DWARF Trees" complete, concise instructions, plus growth chemical. Fascinating, Profitable, only $2.00. Rev. Ealer, Box 37, New York City 53.

RECEIVE MAMMOUTH mails, magazines, catalogs! Three months 25c. year 50c. Waddell's Directory, 341 East 76th, New York 21.

DETECTIVES OPPORTUNITIES. Experience unnecessary. Detective particulars free. Write, Wagoner, 125-J West 86th, New York 24.

FREE GOLD Panning Lesson, Catalogue, Mining Books, Supplies, Maps—"Where To Go"—Old Prospector, Bx 729D3, Lodi, Calif.

INCREDIBLE! BECOME Mental Superman Overnight! Floor everybody! Free Literature! Bijou, Box 1727-LO, Hollywood 28, Calif.

• • • OLD GOLD WANTED

HIGHEST PRICES paid for old gold, silver, platinum, diamonds, watches, gold teeth, spectacles. Cash immediately. Goods returned if offer unsatisfactory. United Smelting Works (The Old Reliable) 39-C South State, Chicago 3.

HIGHEST CASH Paid For Old, Broken Jewelry, Gold Teeth, Watches, Silverware, Diamonds, Spectacles, Platinum. Free Information. Satisfaction Guaranteed. Rose Smelting Company, 29-K East Madison, Chicago.

• • • WATCHES, WATCHMAKING

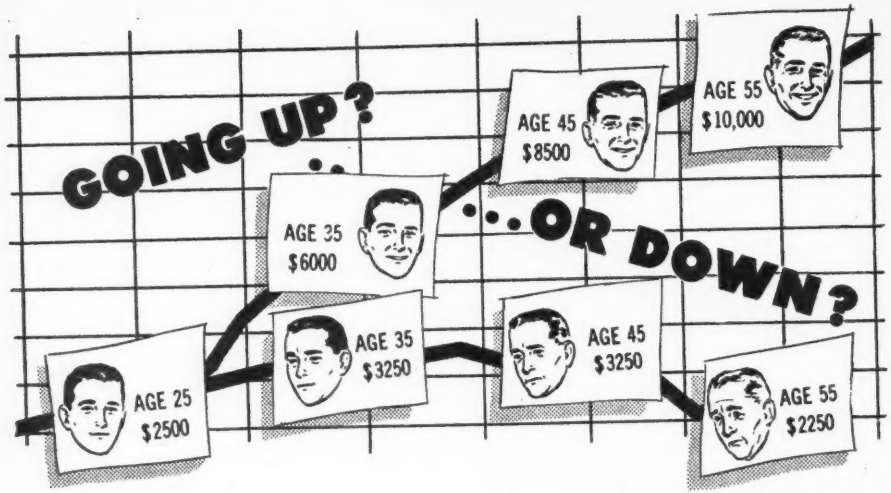
WATCHES PRACTICALLY Wholesale to wearer Direct. Save up to 60% on Famous Make watches, diamonds, jewelry, silverware, gifts, home need and other merchandise. Free Catalog. America's Greatest Values. Send name and address to Maryland Distributing Company, Dept. C-50, 501 E. Baltimore Street, Baltimore 2, Md.

"THE MODERN Clock." All about clock repair. 502 pages. 173 illustrations. $4.95, postpaid. 10-day return privilege. North American, Dept. 32KK, 2018 North Ave., Chicago 47, Ill.

15 JEWEL RECONDITIONED Waltham, Elgins $18.00. Money back guarantee. Dept. 1, Box 78, Shenandoah Junction, W. Va.

5 ELGIN, WALTHAM, Illinois, Hampden Gents' wristwatches needing minor repairs, $18.00. Write for prices. B. Lowe, Holland Bldg., St. Louis 1, Mo.

WATCHMAKERS'—JEWELERS' Tools. Free instructions, catalog. Bengal Company, Culver City, Calif.



YOU'RE looking at *your* future. With the right training you can go *up* — steadily up to management level. You'll make more money — live better as the years go by.

Without that training there's a ceiling on what you can earn. By the time you're middle-aged you'll be on the way down, into the ranks of the poorly paid.

It's up to you to choose. You can make or break your future. And *now* is the time to decide. Not next year, or next month, but *now*. You *can* get the training that will command a trained man's salary. The International Correspondence Schools have helped hundreds of thousands of men to qualify for advancement. And those men had no more at the start than you've got right now. Find out how *you* can prepare yourself — at home and in your own spare time — for the position you want in the work you like best. Don't put it off. Mark this coupon and get it in the mail today.

INTERNATIONAL CORRESPONDENCE SCHOOLS

ICS

BOX 2317-B, SCRANTON 9, PENNA.

Without cost or obligation, please send me the booklet about the course BEFORE which I have marked X:

☐ Please send information about I.C.S. employee training for companies.

ART
☐ Commercial Art
☐ Magazine and Book Illustrating
☐ Cartooning
☐ Show Card and Sign Lettering
☐ Fashion Illustrating

AUTOMOTIVE
☐ Automobile, Machanic
☐ Auto-Elec. Technician
☐ Auto Body Rebuilding and Refinishing
☐ Diesel—Gas Engines

AVIATION
☐ Aeronautical Engineering Jr.
☐ Aircraft Engine Machanic
☐ Airplane Drafting

BUILDING
☐ Architecture
☐ Arch. Drafting
☐ Building Contractor
☐ Estimating
☐ Carpenter and Mill Work
☐ Carpenter Foreman
☐ Reading Blueprints
☐ House Planning
☐ Plumbing
☐ Heating
☐ Steam Fitting
☐ Air Conditioning
☐ Electrician

BUSINESS
☐ Business Administration
☐ Certified Public Accountant
☐ Accounting
☐ Bookkeeping
☐ Stenography and Typing
☐ Secretarial
☐ Federal Tax
☐ Business Correspondence
☐ Personnel and Labor Relations
☐ Advertising
☐ Retail Business Management
☐ Managing Small Business
☐ Sales Management
☐ Salesmanship
☐ Traffic Management

CHEMISTRY
☐ Chemical Engineering
☐ Chemistry
☐ Analytical Chemistry
☐ Petroleum—Nat'l Gas
☐ Pulp and Paper Making
☐ Plastics

CIVIL, STRUCTURAL ENGINEERING
☐ Civil Engineering
☐ Structural Engineering
☐ Surveying and Mapping
☐ Structural Drafting
☐ Highway Engineering
☐ Reading Blueprints
☐ Concrete Construction
☐ Sanitary Engineering

DRAFTING
☐ Aircraft Drafting
☐ Architectural Drafting
☐ Electrical Drafting
☐ Mechanical Drafting
☐ Structural Drafting
☐ Sheet Metal Drafting
☐ Mine Surveying and Drafting

ELECTRICAL
☐ Electrical Engineering
☐ Electrician
☐ Electrical Maintenance
☐ Electrical Drafting
☐ Electric Power and Light
☐ Lineman

HIGH SCHOOL
☐ High School Subjects
☐ College Preparatory
☐ Mathematics
☐ Commercial
☐ Good English

MECHANICAL AND SHOP
☐ Mechanical Engineering
☐ Industrial Engineering
☐ Industrial Supervision
☐ Foremanship
☐ Mechanical Drafting
☐ Machine Design-Drafting
☐ Machine Shop Practice
☐ Tool Design
☐ Industrial Instrumentation
☐ Machine Shop Inspection
☐ Reading Blueprints
☐ Toolmaking
☐ Gas—Electric Welding
☐ Heat Treatment—Metallurgy
☐ Sheet Metal Work
☐ Sheet Metal Pattern Drafting
☐ Refrigeration

POWER
☐ Combustion Engineering
☐ Diesel—Electric
☐ Electric Light and Power
☐ Stationary Steam Engineering
☐ Stationary Fireman

RADIO, TELEVISION, COMMUNICATIONS
☐ General Radio
☐ Radio Operation
☐ Radio Servicing—FM
☐ Television
☐ Electronics
☐ Telephone Work

RAILROAD
☐ Locomotive Engineer
☐ Diesel Locomotive
☐ Air Brakes ☐ Car Inspector
☐ Railroad Administration

TEXTILE
☐ Textile Engineering
☐ Cotton Manufacture
☐ Rayon Manufacture
☐ Woolen Manufacture
☐ Loom Fixing
☐ Finishing and Dyeing
☐ Textile Designing

HOME ARTS
☐ Dressmaking and Designing
☐ Cookery
☐ Tea Room Management

Name _____ Age _____ Home Address _____

City _____ State _____ Working Hours _____ A.M. to _____ P.M.

Occupation _____

Special tuition rates to members of the Armed Forces. Canadian residents send coupon to International Correspondence Schools Canadian, Ltd., Montreal, Canada.

OPPORTUNITY C.O.D.

America is developing a new type man of letters—the mail-order scholar. Through thousands of correspondence schools, he's broadening the scope of his future.

By Lester David

THE red-headed gob was in trouble and a figure was at the root of it all. But it wasn't the kind of figure you would expect a sailor to worry about—this was a mathematical one.

An ambitious kid, this freckle-faced sailor, had set his sights on a higher rating in the United States

Mailers ready some of ICS's outgoing mail. Last year they handled more than five million pieces.

These instructors may look like students, but they're busy grading papers and adding comments.

Navy but found himself lamentably short in trigonometry and geometry, subjects he had to master to win the coveted promotion.

Then, he heard about a mail-order school that promised to get him up in math in a year's time. He wrote, enrolled in the school, often burned the midnight oil well past midnight and finally mastered the year's course in just six weeks.

Then, he took the exams. The gravel-voiced, uke-twanging sailor got his extra stripe and since then, he's made something of a name for himself in and out of the Navy.

Maybe you've heard that name—it's Arthur Godfrey.

Radio and TV's super-salesman is only one of the many millions of Americans who have graduated from the nation's vast network of correspondence schools. Noted educators have termed these institutions the greatest single advance of the century in the entire field of schooling.

Right now, more than 1,500,000 students are actively enrolled in the hundreds of mail-order schools, studying literally thousands of different courses ranging from law to memory training, wool-mixing to accountancy, traffic management to dry-sand molding. You name the field and sure as the post office sells stamps, you can get a mail-order education in it.

Graduates include governors, senators, judges, district attorneys, corporation presidents, noted engineers and inventors, accountants, countless solid citizens earning top incomes in jobs of every description.

Did you know that Eddie Rickenbacker, president and general manager of Eastern Airlines, is a mail-order school grad? Charles E. Wilson, former head of General Electric, rifle developer John Garand, C.I.O. boss Philip Murray, the late Walter P. Chrysler and Arctic explorers Sir Hubert Wilkins and Vilhjalmur Stefansson are all alumni of a lessons-by-mail institution, too.

Which one? The globally-known International Correspondence Schools, the largest educational institution in the world.

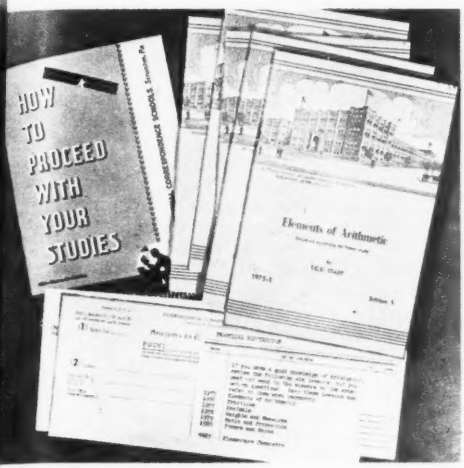
Russia is about the only country where you won't find people studying ICS texts. This is why:

Some years ago, the daughter of an American engineer working in Russia kept up her high-school studies through ICS. When she returned to the U. S. to take college entrance exams, she got high marks in everything but history. Lawrence Tice, president of ICS, was puzzled, and feared there might be something fundamentally wrong with the history course.

"Because we were suspicious," he says, "we asked her to send back the history lessons she had received in Russia and right away the mystery was solved. The Soviet censors had sliced up her history lessons by cutting out all pages that were in any way favorable to that capitalist stronghold, America!"

ICS students come from all walks of life, from every age group. Pretty blonde twins, skaters in a traveling ice show, keep up their high-school studies, with their lessons following them from city to city. There is an 87-year-old grandmother in Cham-

Typical first-work package greets ICS student a few days after his enrollment in a course.



paign, Ill., who studies "so I can keep up with the young folks in my family."

The average student is 27, a veteran, married and a father. About 85 per cent of them have jobs, and half of these are taking courses that relate directly to their work. There's the draftsman studying machine design, the electrician's helper taking electrical and engineering courses, a boiler inspector learning steam engineering. Object: a better job, a better career.

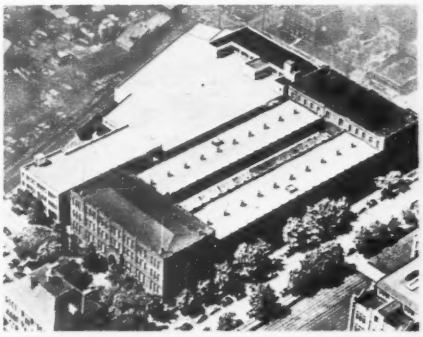
Generally, pupils receive only one lesson at a time, but emergencies sometimes arise. One young man enrolled for a course in home cooking and asked for six lessons in advance. Reason: his wife was expecting a baby and he wanted to know his way around the kitchen before the stork arrived. He got the lessons.

ICS now consists of 23 separate divisions, with a faculty of 400 at Scranton, Pa., and another 400 in its foreign centers in Madrid, London, Cape Town, Buenos Aires, Bombay and other far-off cities. About 150,000 students are actively studying at any given time, and the school is alma mater to nearly 5,000,000 Americans and to another million in foreign countries.

When students enroll in a course, they receive by mail a series of simply-written pamphlets, prepared by experts. These come one at a time and keep the students busy for some 15 hours of home study. An exam comes with each lesson, which the students take and mail back. They are marked, another lesson comes and so on. In addition, students must work out several problems pertaining to the particular les-

Here's the mail-order campus of the National Radio Institute, located in Washington, D. C.

United States Armed Forces Institute is based at the University of Wisconsin in Madison.



Rambling three-story structure in Scranton, Pa., is home of International Correspondence Schools.

Under the wing of a bomber on an Air Force strip in the Far East, an enlisted student of the Armed Forces Institute studies textbook.

son to make certain they have mastered it. Fees range from $50 to $250 and the lengths vary from five or six months up.

One of the most extraordinary correspondence school students is Edgar Slater, who enrolled in a mechanical engineering course back in 1898, then dropped out. Fifty-four years later, he took up where he'd left off and started submitting the remainder of his lessons to win a diploma!

The remarkable Mr. Slater's alma mater is the American School, a 55-year-old correspondence institution where today more than 60,000 students are taking courses in the high-school department alone—which makes it just about the largest high school anywhere in the world.

All together, the school offers 44 distinct courses, consisting of more than 200 separate subjects which require over 500 textbooks, study guides and related instructional material.

National Radio Institute instructor checks a kit which the school provides to students who sign up for the Institute's course in radio servicing.

Among the alumni is a young man named Vincent Kunkler. Vincent was completely paralyzed as a child; he never went beyond the third grade. He cannot move his arms or legs; his only means of getting around is a home-made scooter bike. Yet Vincent Kunkler is winning recognition as a writer, lecturer and painter.

Kunkler is president of Handicap Action, Inc., and several years ago was voted the outstanding young man of the year by the Akron, Ohio, Junior Chamber of Commerce. He won his high school diploma from the American School and carried on from there.

The folks in a small Missouri town thought young Jack Conroy batty as he chased butterflies with nets and assiduously gathered twigs, leaves and assorted herbage. But Jack knew what he was after. He was taking courses in nature study. With a diploma, he entered the University of Missouri and went on to make a name as an author and encyclopedia editor.

Correspondence school lessons are pored over by a missionary in Indonesia, the daughter of a South America mining engineer, an apprentice plumber in Panama City, the son of a Chinese diplomat in Japan, a young priest teaching Eskimo children near the North Pole, a youth in a lighthouse off Newfoundland.

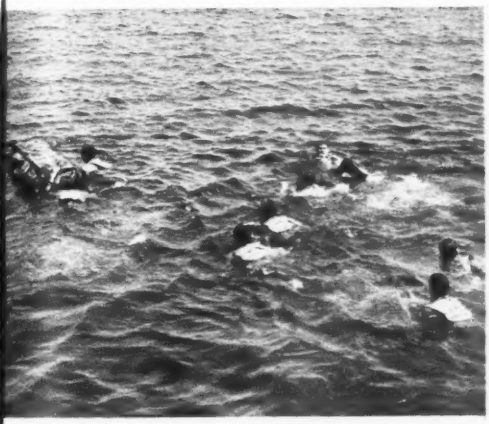
And by tens of thousands of young men in low-paid jobs who want to rise higher. Do they? Well, look at Alex Stein, an unskilled laborer at 17 who took a series of courses and is now a faculty member of the Massachusetts Institute of Technology.

Or Sam Evanovich, who put up an entire building all by himself in his spare time with construction techniques he learned. He turned it into a super-market and it's doing right well in Cupertino, Calif.

Or the youth who held a tiny job in a bank, took a course, later graduated from New York University and now holds a responsible job with the New York State Department of Taxation and Finance.

Little guys who want to be bigger guys are peppered throughout the rolls of the LaSalle Extension [*Continued on page* 158]

Amphibious Cargo Carrier. the Otter, weighs 12,000 pounds and will operate on land or water. Built by Pontiac for the U. S. Army, it is mobile on snow, in mud or over rough terrain and can make 30 mph on land, 4 to 8 mph in water. Powered by an air cooled engine which develops 134 hp, it can carry 3,000 pounds.



NEW in SCIENCE

All-Weather Lifeboat. weighing 230 pounds, inflates in 30 seconds and holds 15 survivors. It provides protection up to 70 degrees in sub-zero or tropical weather by means of dead-air space insulation in canopy and floor liner which holds radiant heat from bodies. Designed by Bureau of Ships and B. F. Goodrich for Navy use.

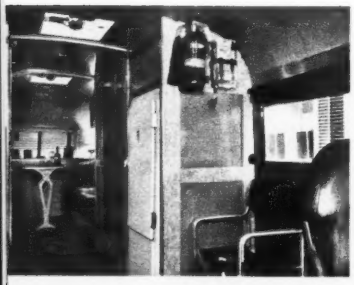
Trull home on wheels. Oscar says he can take a shower on a busy street and no one is the wiser. Hot water, too. Sun heats water in roof.

ROLLING HOME

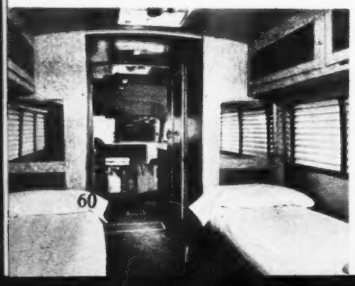
PEOPLE hail them on the street and then bang on their door, demanding to be let in. But Miriam and Oscar Trull just grin, wave and drive on.

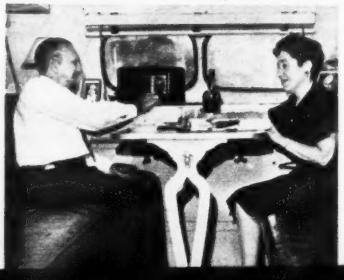
Their home is a 25x7½-foot combination living room, bedroom, bath, kitchen and automobile. Oscar Trull spent a year designing and converting it from a seatless Pony Cruiser bus. Then one day in November he closed down his machine shop in New Orleans for good and he and his wife and bus took to the road.

"There's nothing like seeing the country by bus—your own bus," he says. "We're going to hit all 48 states before we're through, and then we'll go to Canada and New Mexico. Then we'll start all over again." And their home just rolls along. •



At far left is view of interior from driver's seat. Note refrigerator. At left are sink, toilet, cabinets. Finish is steel, Formica. Stove uses butane.





Convertible sofa beds are foam rubber. Storage cabinets are in roof, floor. Table, left, is at rear of bus and folds away when not in use.

THIS MONTH'S PRIZE

Razor-Blade Letter Opener

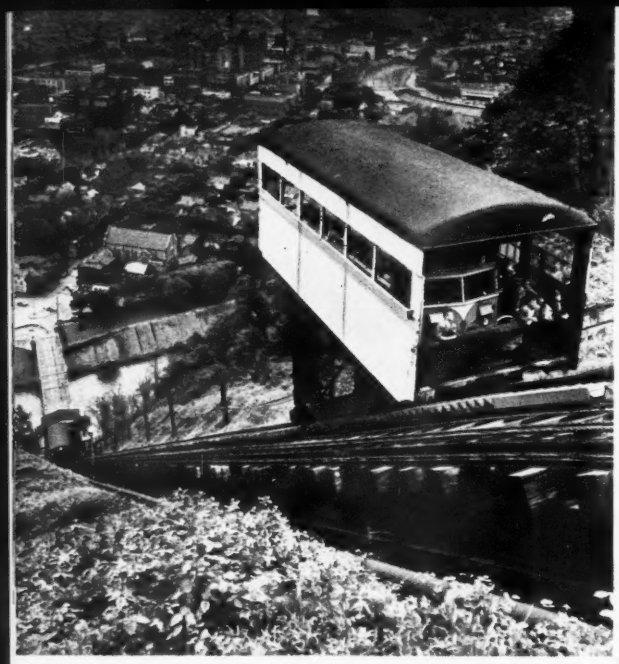
WIN $50

ONE thing certainly leads to another, Leo Gendernalik insists. First, he invented a stamp-licking gadget five years ago. Then, when mail orders started pouring in, it occurred to him that there ought to be a cheap, easy way to open the letters. So, he experimented in his workshop till he came up with a molded plastic rectangle with an injector-type razor blade inside. You simply pull the envelope through a slot and the blade slices through the edge.

Dreamed up a neat gadget? If you're pretty keen about that pet project of yours, get busy and work it out in your shop. Then send pictures and a description of your invention to the Gadget Editor, Mechanix Illustrated, 67 West 44th Street, New York 36, N. Y. Each month the best entry gets a cash prize of $50.

Inventor Leo Gendernalik assembles one of the plastic letter openers at the workbench of his gadget factory which is located in Encino, Calif.

With the Genie Letter Opener in his right hand, Gendernalik inserts the edge of an envelope into the slot and then easily cuts through the paper.

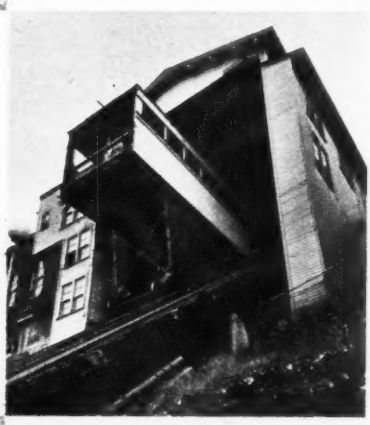


World's Steepest Railway

Steep angle of rise causes the conveyances to stick out from track rather than rest on it. With 7½-ton capacity, the cars carry autos and buses as well as regular passengers.

IN Johnstown, Pa., there's a railroad that goes almost straight up with cars that run nearly perpendicular to the track. This phenomenon in transportation is the famous Inclined Plane which connects Westmont with Johnstown. Believed to be the steepest railway in the world, its track runs over a 900 foot runway at a grade of 71 per cent. The Plane was opened on June 1, 1891 and has since carried 39,000,000 passengers. Riders are transported in cars pulled by two-inch cables attached to a 300-hp electric motor.

Despite its frightening appearance, the Inclined Plane has proved to be one of America's safest transportation systems. And it's the only one that combines the thrills of an amusement park with the convenience of a railway.



Each car has a pulling cable and a safety cable. The pulling cable is connected to a 16-foot drum driven by a 300-hp engine located here at the top of the Inclined Plane.

Cables are attached to each end of the drum so that when the cars are in motion, the down-car cable unwinds and the up-car cable winds. Here, the two cars meet at mid-point.

Political candidate, right, was made of steel wool, pipe and spectacled tea pot.

Society matron with Gatliff, right, is really two pitchers and scouring pads.

Big Mouth, left, developed from a pitcher, sun glasses and rubber stripping.

Artist In Hardware

RESIDENTS of Miami, Fla., are doing more window shopping than usual these days. For in the display windows of Railey-Milam, Inc., they can study creations of Robert Gatliff, who turns pots and pans into crowd-stopping exhibits.

Giant Vacuum Sweeper

Modified sweeper with tow truck can now pick up anything that fits through its 10-inch suction hose.

CALIFORNIA'S highway department recently found that a ready-made machine capable of picking up such things as beer cans and bottles couldn't be bought. So, a standard suction-type sweeper was acquired. Then, engineers went to work adapting it to fit California's peculiar needs.

One sweeper and two men replace seven workers. Mounted hose with increased suction, below, is controlled by man on back who sweeps five-foot strip. Dump mechanism, right, operates off Ford engine.

SKY SNIPER —
Newest Secret Weapon?

A cheap, dependable light plane, heavily armed and armored, flown by Army personnel, to give our soldiers the close support they badly need.

By Frank Tinsley

LET'S give our fighting GI's a new deal in air protection. The Air Force is doing a good job but its planes aren't capable of giving the infantry the close ground support it needs. We want planes that can come down and fight side-by-side with the men, cheap planes that can be produced in large numbers without ruining our economy. And let's put them in the hands of the Army, itself.

Such a plane must be a sort of aerial jeep, adaptable to a wide variety of uses. It must be quickly convertible to attack, liaison, photographic and possibly, night fighting missions.

It should be able to deliver light loads of rations, water and ammunition to isolated units, lay phone lines and evacuate casualties. It need not be particularly fast but must be highly maneuverable to dodge obstacles and ground fire. It should be virtually unstallable, have a really low landing speed and be equipped with cross-wind landing gear.

It should be armored against flak fragments and small arms fire, should mount a battery of anti-personnel machine guns, carry rockets and a variety of bombs. The plane should be designed for cheap, fast production and limited life.

Quite an order, isn't it? Can a light plane really be built to meet such extreme specifications? Probably not—if we stick to conventional layouts. There is, however, a configuration that might fill the bill. It is the duo-mono wing arrangement invented in France and sponsored in this country by the Pardel Development Corporation of New York. Looking like a cross between a widely staggered biplane and a tandem-wing setup, the two duo-mono lifting surfaces function as a single slotted wing. Four basic advantages are claimed for the duo-mono principle.

First, the wing is stall proof, even at angles as high as 30 degrees.

Second, with power on, the slipstream of the twin propellers gives high-speed control at low forward speeds. This results in vastly increased lift.

Third, there is reduced fuselage drag in normal flight attitude, attributed to a delayed boundary layer separation effect.

Fourth, in low-speed landing approaches, the plane becomes one big air brake when the stick is pulled back. With full power on, this results in an almost helicopter-like hovering.

A light attack-plane design, improving upon the duo-mono layout, is now being developed. In this model the addition of end plates between the wingtips encloses the slipstream in a virtual wind tunnel. This not only strengthens the structural setup but also extracts maximum lift from the fast moving flow of air. Although tiny in size—17 feet long, 34½ feet in span, 6½ feet high—the dual lifting surfaces have an area of 322 feet and are loaded lightly enough to permit a landing speed of about 20 mph.

This is no aerial baby buggy, however. With a gross weight of nearly 5,000 pounds, the duo-mono T-1 lifts 1,850 pounds of armor and armament and carries fuel for one hour. Its twin gas turbines, also armored, swing 12-foot propellers and drive the little fighter through the air at better than 150 mph. The pilot is completely enclosed in plastiglass armor and bullet-proof glass. He is armed with six .30 caliber machine guns in the lower wing roots, sixteen 3-inch rockets in twin automatic launchers and 250 pounds of bombs of various types.

The T-1 is intended to carry out short, local combat missions from hastily prepared strip bases close behind the front lines. A rugged leaf-spring undercarriage of the bicycle type fitted with dual, castering wheels permits cross-wind landings on rough runways. Easily changed, plastic nose cones are equipped with a variety of specialized armament, cameras, etc. Light, compact radar installations now under development may even permit all-weather operation. A hinged tail cone tilts upward for rapid rearming and refueling. The gas tank, holding 85 gallons, is self-sealing and explosion resistant. With the empty rocket magazines removed, the tail section will accommodate a stretcher case on a litter.

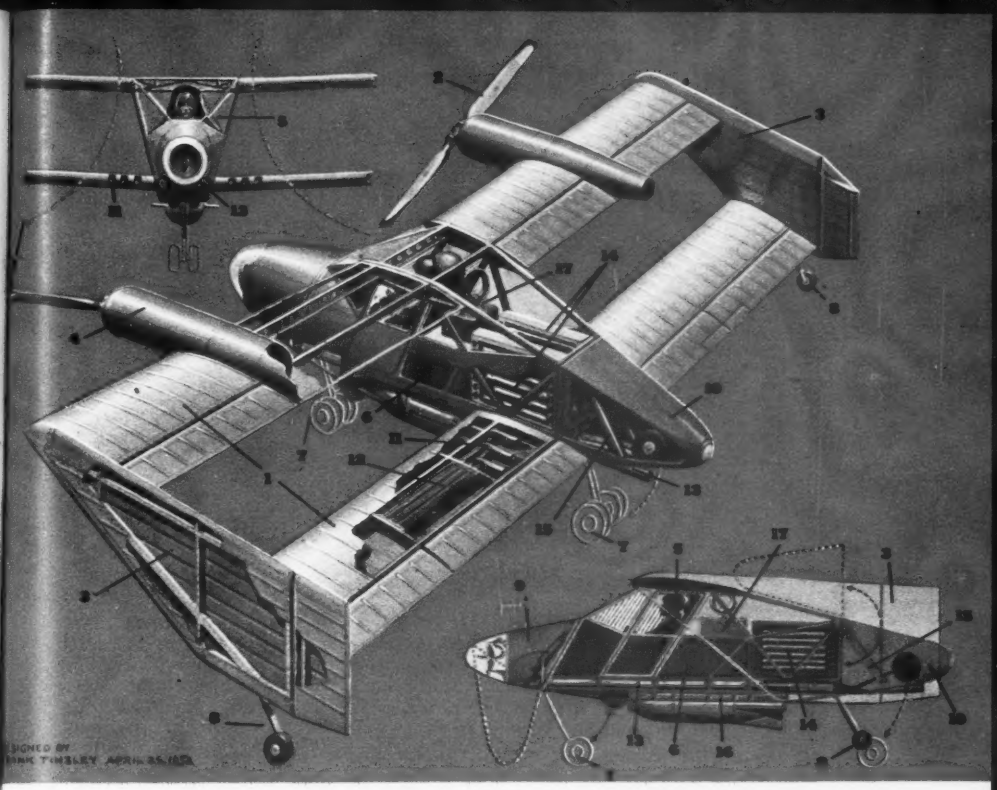
Let's see how these deadly little lightweights would operate in actual battle. Our infantry units attacking an enemy hilltop are stopped at a strong point. The enemy is dug in so deeply that neither mortar nor howitzer fire can disturb them. A frontal assault would cost dearly. Yet the attack schedule must be adhered to or neighboring elements will be left wide open. What to do?

The infantry C.O. gets on the phone. Over the air-laid wire goes a concise report and map references locating the enemy bunker.

Back in the Divisional C.P., the Air Controller glances at his operations board. A colored marker shows T-1 No. 28 in the neighborhood, just completing a mission. The pilot obviously knows the terrain in that area so he's elected. A pointed finger and the word, napalm, starts a sergeant talking over an airstrip phone. The orders are clipped, codified, as hundreds of planes are in the air and the traffic on the board is heavy.

T-1 No. 28 touches down and is flagged to a halt in the rearming area. The ground crews are on her almost before she stops rolling. The tail cone is lifted and the rocket magazines slid out on to a flatbed jeep. A fuel truck tops off the fighter's tank. Meanwhile, loaded dollies replace the rocket weight with napalm fire bombs. The location of the enemy bunker is pinpointed on the pilot's large-scale map. In a matter of minutes, he takes off and heads for his new objective.

On the shell-pitted hillside, waiting infantrymen watch the bat-like cloud of



1: Duo-mono wing arrangement acts like a slotted wing. It generates high lift for slow landing and is stall proof. 2: Slipstream of the large diameter props blankets the entire wing surfaces with forced airflow. Wind-tunnel effect increases maneuverability at low speeds. 3: End plates confine the fast flowing slipstream to the wing surfaces, utilizing 100% of their lifting efficiency. 4: Two 200-hp gas turbines in armored nacelles provide compact, low vibration power plants. 5: Pilot's cockpit is armored with moulded fibreglass plastic and bullet-proof glass. Splayed-out sides permit downward vision. 6: An 85-gallon self-sealing tank holds fuel for one hour at full throttle. It is fitted with a new explosion inhibiting device. 7: Dual-wheel, bicycle-type landing gear retracts upward into the fuselage. It has a simple leaf-spring strut and a combination shock absorber and actuator. 8: Side wheels, mounted on fixed leaf-springs, prevent tipover while taxiing. 9: Detachable nose cones of moulded plastiglass carry all-weather radar, camera units and a variety of armaments. They are easily switched for special missions. 10: The moulded plastiglass tail cone is fitted with a tail light. It tilts upward to permit easy loading of rocket magazines, flares, etc. 11: The fixed battery of six .30-cal. machine guns provides large volume, economical ground fire. 12: The machine-gun ammunition is ground loaded in detachable trays, easily changed. A hinged plate covers entire gun installation. 13: Twin automatic launching tubes fire 3-inch anti-tank rockets. Back blast is vented under tail. 14: A separate rocket magazine feeds into each of the launchers. 15: Twin tubes hold flares for night fighting and photography. 16: The 8-by-2-foot bomb bay accommodates a variety of H. E., fragmentation and napalm bombs. 17: There's two-way voice communication and navigational homing circuits.

planes and try to pick out their particular baby. Then a T-1 swoops and the bunker erupts in a sea of searing, orange flame. Enemy fire ceases and a few fleeing figures try to outstrip the spreading death. With relieved grins, the tired doughfeet rise from their shelters and head for the summit. One hit—no errors—no casualties.

This is the sort of down-to-earth, local air support that our troops should and must have. It can best be supplied by low-cost, limited-life planes of the type described. And it should be monitored and controlled by the people it works for—the ground forces. Let the Air Force take care of the fast stuff, rear area interdiction and strategic bombing. That's their job. But let the doughboys' planes be run by their logical directors—the doughboys. It's high time we forgot interservice rivalries and got down to the brass tacks of military logic. Let's revive the Army Air Corps! •

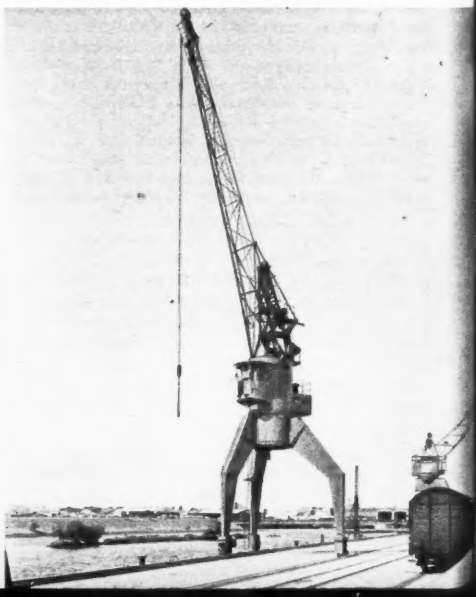
NEW in SCIENCE

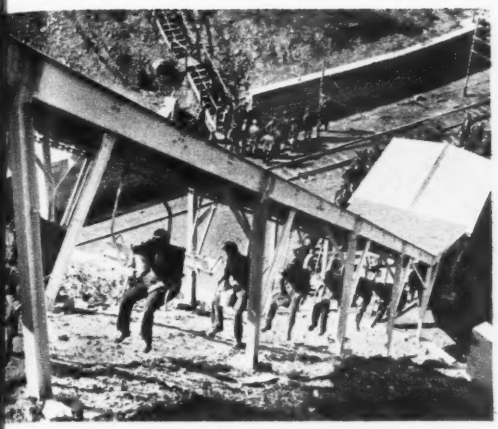
World's Largest Helicopter carries cargo by straddling it like lumber carrier does a load of lumber. Jet powered, the XH17 was built by Hughes Aircraft and is designed for short-range moving of heavy military equipment. Jets are near rotor tips.

Omega Timer with built-in gun connection takes a composite picture of finish line of a race and prints time in 1/100ths of a second below each contestant. It is valued at $7,000 and was used in Olympic Games in Helsinki for accuracy in judging.

Shower Tester catches water from shower in a large funnel from which it runs into a can. Hose conducts water to sink. Showers are in General Electric to douse scientists whose clothes catch fire. They are seldom used, but must be checked.

Three-Legged Crane designed by Demag-Works at Duisburg, Germany, resembles monster from Mars. It is used for unloading freight from ships. Wheels run in tracks and are held to them by clips. One of the ship-side wheels is motor driven.

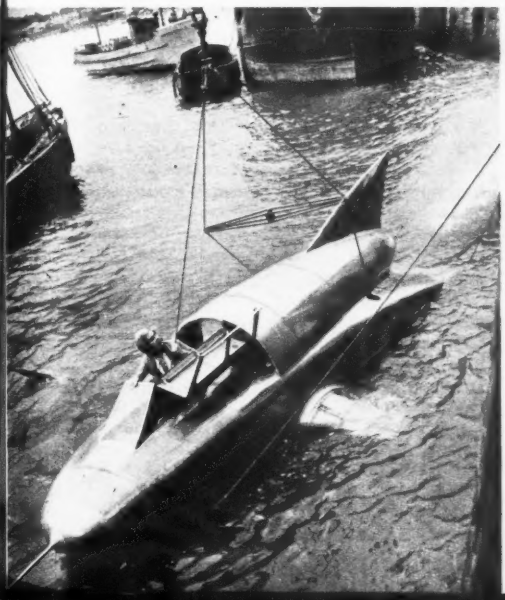




Ski Hoist installed at U. S. Steel's new Gary No. 14 mine provides comfortable lift at end of miners' hard day, taking men from lower portal to shower baths at exit level. Skiers are familiar with the belt seating device, but this is first use in mines.

Synchro-Tape process is used for making sound movies with Revere tape recorder. Instrument is placed in front of projector lens. Light from lens is reflected onto moving ribbon of tape for timing. Sound track is made with usual mike.

Jet Engine Hydrofoil. White Hawk, designed by F. E. Hanning-Lee of London will attempt to break world's water speed record now held by America. Speed trials are being conducted at Margate. Design decreases air and water resistance.



Airphone will replace pilot's old-fashioned headset. It is a miniature ear phone which works like a hearing aid. Ear piece is custom-fitted. Unit weighs 2½ ounces and is 12 times as sensitive, has volume control. Airphone, Calumet Bldg., Miami.

On thousands of American farms today, it's not unusual to find an airplane sharing the work with the rest of the agricultural equipment.

THE FARMER

How're ya gonna keep 'em down on the farm when they're already up above it? Yes, 20,000 rural Americans have traded flivvers for wings.

By Chester Whitehorn

"IT was right after a storm," the farmer said, "and the fences on my land were down. The cattle were scattered maybe halfway to Little River and I would have lost a week trying to round them up on foot or horseback. Instead, Sonny Neel appeared on the scene and we located every last calf in less than an hour."

Who is Sonny Neel and what mystical powers does he possess? Well, Sonny's a farmer and there's nothing mystic about his powers—he owns an airplane.

Neel is the first to deny that there's anything extraordinary about him. "I'm just a farmer," he says. "I've got 1,500 acres—grow some wheat, maze, cattle feed; mostly livestock though. The fact that I use a Piper in my work isn't anything unusual.

In his Piper Tri-Pacer, above, Sonny Neel and his wife round up some stray cattle at the edge of their property. At the farmhouse window, below, Mrs. Neel and daughter Connie watch for pop who is returning from an hour-and-a-half hop to Kansas City where he bought new parts for machinery.

Great Bend, Ind., is only 60 miles away so Mrs. Neel, above, often does her shopping there by plane. When harvesting time comes, Sonny Neel, below center, works hand in hand with the farmhands—he in the air and they on the ground. Here, he checks map of harvesting area with them.

TAKES A PLANE . . .

There are a thousand men just like me in Kansas alone." Then he'll go on to explain about America's flying farmers.

Five short years ago they were a rarity. Today, there are 20,000 flying farmers in the United States, with the number increasing steadily. The National Flying Farmers Association has more than 5,000 members—pioneers bringing a new way of life to rural America. When they get together to discuss agriculture, their talk is more often about airplanes than crops. Even their home life centers around the family plane, just as a few years ago it was the family car.

There's a general impression that flying farmers will fly anything with wings. And unlike most rumors, this one is true. Some farmers, like Neel, fly standard small aircraft. Others own Army surplus planes. Chances are if B-29s were available, they'd fly them too.

They literally run their farms and, in many instances their social lives, from the sky. In the course of a single week a flying farmer will likely as not buy cattle in Texas, machine parts in Michigan, visit relatives in Ohio and still have time to spray fertilizer from aloft on his farmland in Iowa.

"I couldn't do the work I'm doing now without a plane," Neel insists. "It used to take me six or seven hours to drive to Kansas City—now I get there in an hour and a half. I've always had to do a lot of traveling, buying and selling livestock in

Six Navions were recently used to save a wheat crop from the ravages of frost. Flying at about 75 mph with their large flaps lowered, they stirred up the chilled air so frost couldn't form on wheat.

At a county fair in Kankakee, Ill., 117 airplanes descended on the fairgrounds carrying 279 flying farmers from Illinois, Indiana, Michigan and Wisconsin. They parked planes around the racetrack.

different states. I figure flying gives me an extra month each year."

If there were such a title as Typical Flying Farmer, Neel would fit the description perfectly. Thirty-seven years old, he lives in Windom with his wife, Virginia, and their two children. He got the flying bug in 1945, a banner year for aerial farming, when dozens of other farmers got the same idea and hundreds of farm-boy veterans returned from service to buy surplus planes. It was during this same year that the nation's private flying instructors began reporting increasing numbers of farmer-students and small-plane manufacturers noticed their sales growing in rural areas.

"My reasons for learning to fly were pretty simple," Neel says today. "I was having trouble with cattle strays—losing a lot of time tracking them down. I'd heard you could locate a stray in just a few seconds from the air. Not only that but you could check your fences and even count your stock from a plane. It wasn't until afterward that I began realizing how many other jobs you could do as well."

It started off as a cooperative venture. Neel got together with 11 of his neighbors. "We all had pretty much the same problems and the same ideas about flying. Each of us put up $150. We bought a Piper Cub. After a while we found ourselves an instructor. We charged ourselves $1.50 an hour while we were learning and that took care of almost all our expenses. I guess a lot of other farmers in this section of the country had the same idea. Take Little River, the town nearest to my farm. The population is only 1,000 but they've got an airstrip just two blocks from Main Street. Right now, within ten miles of my house there are eight strips."

Neel doesn't have an airstrip on his own land. He uses the stretch of public road before his house as a runway. "It works just fine," he reports. "And the neighbors don't mind. They seem to get a kick out of it. I've got my own hangar, of course, right near the house."

Since 1945, Neel has had a total of five planes. He wonders now how any farmer can get along without a plane of his own. The nearest sizeable towns to Neel's place are Great Bend, 60 miles away, and Kansas City, 200 miles away. Formerly, a visit to either meant an all-day excursion with much planning beforehand. Now they're just a short hop away from the farm. "I buy most of my supplies in Great Bend," says Neel. "Occasionally, I'll go to Kansas City. I've gone there a number of times to buy parts for farm machinery. I can remember a few years ago, when a machine broke down, it would mean waiting maybe a couple of days for repair parts. There's still a delay now, of course, but it's usually just hours, not days."

Neel's preoccupation with minutes saved is not extraordinary. In any part of the country, when flying farmers get together, the word time plays an important role in their conversation. Some farmers claim gains of two months or more each year. Neel's statement that he saves a month a year is about average. And since he's only one of 20,000 aerial farmers, the work hours gained on a national scale add up to a fabulous 1,667 years annually.

For most flying farmers, the extra time means a chance to buy and work more land. In California, for instance, one flying

rice grower has discovered that he can now plant hundreds of acres a day from aloft compared to only 75 acres before. Instead of hand-weeding—a time consuming, back-breaking job—he now does his weeding by spraying chemicals on his fields.

A Kansas neighbor of Neel's, a middle-aged wheat farmer, talked for years about becoming a Southwest cattleman. But he never was able to translate his talk into action since that would have meant leaving his home state and all his friends behind. Today, as a flying farmer, he's still growing wheat in Kansas but owns ranches in Colorado and Texas as well. The speed of his new plane enables him to personally supervise all three properties.

As for Neel himself—well, last month he flew over 8,000 miles, transacted business in a number of states and found time to visit his wife's folks in Oregon and Idaho. The social visit alone—a journey covering more than 1,500 miles—would have taken longer than three days by car.

The Neels still have an automobile—but each year they seem to do less driving and more flying. "I use a car locally," says Neel, "to drive maybe four or five miles. But for any trip longer than that I use the plane. I guess a lot of other farmers do the same thing. Last time we flew to the Kansas State Fair, there were 300 planes besides our own. There was a landing strip right on the fair grounds. We flew some 4-H kids to the fair and they really enjoyed the flight. Lots of times you take people up who've never flown before and they want to learn flying themselves. That's the way a lot of your neighbors get started—they come along on, say, a conservation tour to look at the contours of their land and the first thing you know they want to buy a plane of their own.

"One time, though, I took a really big man up, about 200 pounds, and he kicked the rudder pedal while we were taking off. We almost turned over but finally got into the air all right. Then he wanted to know if I always took off that way!"

Neel has had one or two mishaps since he started flying, but never anything serious. "One time when I was taxiing I dropped into a hole, and another time, just sitting still, a whirlwind caught the plane and turned it over. That one cost about $300 in damages. But I still think flying's safer than driving. In the winter, when it snows, I just scrape enough of the road to make a runway. Once I'm off the ground, I don't have to worry about skidding or getting stuck. If I had to drive over some of the roads I fly over, I guess I'd just stay home."

Neel's not the only flying farmer to talk this way. Earlier in the year, when surprise snowstorms swept the West and thousands of rural families were snowbound, flying farmers were still able to take to the air. They shuttled mail and supplies from town to their stranded neighbors. They located lost cattle and dropped bales of feed to them from aloft. All in all, they proved that winter isolation down on the farm was no longer to be feared.

It's already a fact in rural America that the farmer is not the only one to fly the family plane. Often his wife flies, too, and not infrequently his older children. Neel's wife, Virginia, made her first solo flight recently and expects to have her pilot's license before long. Neel's son, who's just 14, can handle a plane in the air with Dad along to supervise though he hasn't yet learned to take off or land. Neel's daughter, the baby of the family, hasn't begun flying as yet, but no doubt in a few years she'll be wanting to learn.

A typical scene at the Neel house, just a short time from now, may see Virginia Neel flying off on shopping tours, her daughter planning to use the family plane to go to a dance, while Neel Jr. pleads: "Aw gee, Dad, I've just got to have the plane this Saturday. I have a heavy date in Great Bend." Chances are Dad will end up needing a second plane for business purposes.

This scene is less fantastic than it may sound. Not long ago in Ohio a farmer taught his daughter to fly. Once she had her license, he found her using his airplane more and more frequently. She met and fell in love with a young man on a farm some 70 miles from home. After knowing each other three months, the young couple decided to run off and get married. When they eloped, it was in Dad's plane—with the girl doing the piloting.

Certainly Neel doesn't expect one of his youngsters to elope in the family plane but he'd be the first to admit that having an airplane on the farm means practically anything can happen. His own family life, and that of his airborne neighbors, has already changed in a hundred ways—and who knows what the future will bring. Hardly a day goes by when he doesn't hear of a new method of dropping seeds from the sky or a new chemical which can be sprayed on the land to kill weeds.

Most important of all, Neel knows that aerial farming—in this country at least—is putting an end to the semi-primitive existence that rural life has always meant. Last March, he and Virginia, along with 150 other flying farmers in 78 planes, flew down to Mexico just for the fun of it. In Grandpa's day, such an excursion would have been as far-fetched as a trip to the moon; to Neel's own father, it would have seemed downright impractical, if not impossible. But to Sonny and Virginia it was just part of their new way of life as a couple of America's flying farmers. •

In his metal shop Smiley built this gas tank pontoon boat at a cost of only $25.

Six-Shop Smiley Burnette

Name almost any hobby and you can bet this singing cowboy is active in it.

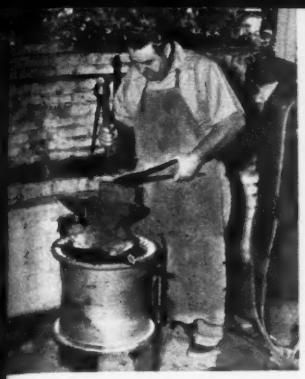
By S. Nolyn

ALTHOUGH Western singer Smiley Burnette is known for his movie and radio comedy roles, few people know of the other talents that Smiley keeps secluded on his one-acre rancho at North Hollywood, Calif.

He's a veritable one-man industry—wood craftsman, photographer, printer, metallurgist, painter and recording engineer. He's learned all he could about the six avocations, and built six shops on the grounds of his ranch to pursue each one of them effectively.

The first building he constructed was a 20 by 30-foot woodworking shop. That was 14 years ago and today the shop is replete with modern equipment.

Built into the floor, for example, is a trap door through which Smiley dumps sawdust onto a flat mobile cart. The cart is mounted on tiny tracks and when it's full of sawdust, he hauls it from under the building, mixes the sawdust with an oil and uses it for a sweeping compound.

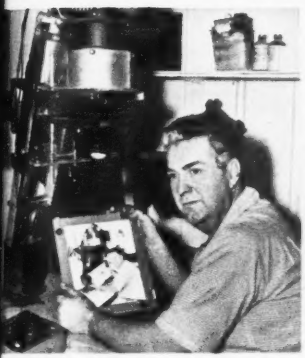


With his hammer and tongs, Burnette makes ornaments in the metal-working shop.

Small cart on tracks beneath floor catches dust and scraps as they are swept into hole.

Everything from personalized Christmas cards to "Keep Off" signs are made in print shop.

In the darkroom, he prints all of his own pictures and teaches his kids photography.



Recording shop has equipment for cutting records of his own show and direct line to studio.

Pop Smiley Burnette shows son Stephen, 11, how to keep his rifle in tip-top condition.

Most of the large tools, such as the drill press, are on wheels. A cabinet-like framework with a drawer covers the moving parts of the lathe, drill press, coping and band saws as a safety measure. Excessive sawdust or wood chips spill into the drawer from the bits and chisels. It is a simple procedure to empty the drawer after it fills.

The main workbench of the shop is 3½ by 9 by 4 feet. A huge drawer, 14 inches shorter than the bench, is mounted on roller-skate wheels. It contains heavy tools such as hammers, hand saws and drills, and it requires only the power of the little finger to open it.

His photographic shop was designed, built and equipped at a cost of $750. Smiley competently operates any camera, takes his own publicity shots and prints them in the 10 by 6-foot darkroom.

In his third shop Smiley sets type and prints everything from a handbill to a menu on a small hand press.

Affable and unassuming, Smiley likes to tinker with metal, too. His metal shop is complete with a small forge, anvil and tongs and three types of welding equipment for arc, spot and acetylene welding. A power-driven hacksaw is one of Smiley's favorite labor-saving tools.

A fifth shop reflects another of Smiley's avocations—painting. You can find every type of paint-spreading apparatus from a lettering brush to a large spray gun.

But perhaps most elaborate and expensive is the recording shop, where Smiley goes to write his songs, study his scripts and cut records for prospective radio broadcasts. A built-in sound control room with custom-made equipment is probably the main feature of this shop.

Smiley probably spends the greatest portion of his spare time in the woodworking shop. For instance, weeks before Christmas found him carving gifts of cheese knives, hewn from 100-year-old walnut blocks, for his friends. In this shop Smiley also dreams up [*Continued on page* 170]

I Turn Worms into

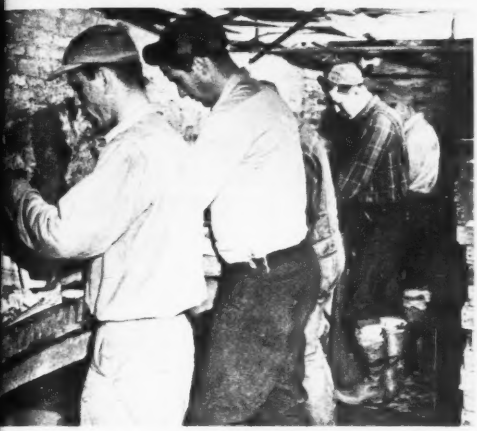
It's basically a question of transportation—from mud bank to savings bank. But, in between, America's fishermen get some fine bait.

By F. H. Hammond

BACK in 1937, when I started digging bloodworms and sandworms from the mud-flats near my Wiscasset, Me., home I never dreamed that I would ship $71,999.62 worth of them for fishing bait in 1951.

Nevertheless, that's what has happened and it's not the end, either. I've seen my bait business mushroom as much as 35 per cent in successive years. Right now, I am selling to 53 customers and have 114 more who are eager to buy if I can supply the worms. One customer purchased $8,261 worth of worms in 1951; the least any of the 53 customers bought came to $200.

Back in the 30's, when I started fishing for stripers in Maine salt-water rivers, I



After Hammond's workers collect the bloodworms from the mud flats with digging forks, left, they return to his cellar, below left, to count and sort. Then, Hammond packs the worms in rockweed, far left, and ships them in paper cartons.

Dollars

experimented with all kinds of artificial lures and with various live baits, little dreaming that this would set the pattern of my later life. I found that striped bass feed heavily on sandworms and bloodworms, nosing into mussel beds and rooting out worms like pigs with fins. At low tide, I've seen big schools of them in water so shallow their back fins showed like scores of flashing knives. Drag a spinner and worms through them at such times and you'll get some of the fastest, most vicious strikes imaginable.

Naturally, I dug a lot of worms when I discovered they would take bass. Meanwhile, word that sandworms and bloodworms were top striper baits spread all over the East. Sportsmen wrote to me, wanting to buy worms by the dozen, then in hundred lots. When I began shipping, I soon found I needed a large, cool cellar. This I found in a house in Wiscasset, Me., that had the added advantage of being close to the railroad station and within sight of the Sheepscot river mud flats, where worms can be dug.

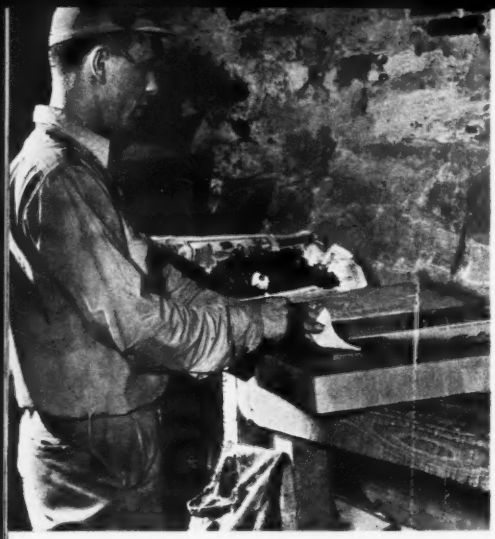
My next need was a crew of diggers. I was able to secure 41 men last year and had a total of 72 on the payroll from March to December in 1951. I hope I can get more this year to keep up with the demand for worms.

The men work a few hours a day—when the tide is out enough to expose the mud flats where the worms live. Sometimes both bloodworms and sandworms are found in the same section of flats but more often the two types thrive in different localities. There are more bloodworms in my area, so the diggers bring in more of these. Top diggers sometimes earn as much as $200 a week; regular men average about $2,500 for seven to eight months work.

This worm business is an amazing adventure. It's not all sugar and spice, though. For instance, we have several farm kids who dig worms after school and, at two cents per bloodworm and $1.40 a hundred for sandworms, they earn quite a bit of money. But like any kids, they spatter themselves with mud from head to foot. So you can be sure none of their mothers' love is beamed in my direction.

Most buyers re-sell to sports and commercial fishermen. By far the largest use of the worms is by striped-bass fishermen. I have shipped worms as far away as California but my chief markets are in New York, Virginia, New Jersey, Connecticut and Massachusetts. Usually, the big rush starts about the middle of March.

Both bloodworms and sandworms are used to catch striped bass, weakfish, flounders, eels, smelts and blackfish. One thing has puzzled me: in Virginia, the sportsmen use sandworms to catch these fish. In New Jersey, bloodworms are used and New York anglers often try sandworms. Where bloodworms are preferred, I shipped some sandworms free last year to try to show



Shipping labels are pasted on carefully packed boxes and then worms are sent as far west as California although New York is the top market.

In their living room office, Mr. and Mrs. F. H. Hammond of Wiscasset, Me., keep books and take orders for their bloodworm and sandworm business.

sportsmen the stripers would take sandworms but they didn't catch on at all.

In the early days, the worm industry had no protection. Born overnight, it grew rapidly. Over in New Hampshire they have only 18 miles of coast and far fewer miles of flats. A lot of Massachusetts diggers swarmed into that section, I've been told, and started hauling off worms by the truckload. There wasn't any law against it but wardens finally got a case by charging diggers with exposing clams. That ended the thing. Then Massachusetts diggers invaded western Maine. Fists, clubs and clam hoes were used as weapons in a pitched battle and the Bay Staters finally retired for good.

Although Maine has a direct coastline of about 250 miles, the Atlantic Ocean cuts into this to form bays and inlets, and river mouths add to the irregularity so the actual mileage is ten times as great. In many places along this shore, sandworms and bloodworms exist in good numbers. Some towns have local restrictions that limit digging to their own residents. My town does not, but my output is limited because these other places are closed to my diggers. The constitutionality of these local laws is being tested and I believe we soon will be able to expand our business even more.

I have 300 trays in my cellar storage room to receive worms as they are brought in. They must be shipped within 48 hours after digging so I have rockweed (seaweed) all ready and pack the worms in this material. They go out in pasteboard cartons.

The Maine marine worm industry now supplies more than 30 million bloodworms and sandworms to dealers. There are about 400 diggers along the entire coast. This unique industry is worth more to the state than the cod, haddock, hake, pollock or mackerel fisheries, according to the Maine Sea and Shore Fisheries Department.

The digger's equipment is a digging hoe (a fork-like tool with long tines and a short wooden handle), a container to receive the worms and a pair of high rubber boots to wear over his old clothes.

The bloodworm is pink and red in color. From a tiny worm, it sometimes grows to two feet in length. I found out early that fishermen prefer worms at least six inches long so I use these as minimum lengths.

The sandworm is a flat, segmented worm with appendages along each side for burrowing and swimming. It has been known to reach an extreme length of four feet but the average is much shorter.

Striped bass fishermen often attach the worms to a hook and use free-running spinners to attract the attention of the fish. They are used for still fishing as well. The sale of spinners has increased tremendously since worms became such a popular bait.

One warning, if you're going worming—sandworms nip your fingers if you don't watch out, but the bite isn't harmful. Worms are like geese: they just fasten on and if you pull away, it hurts. Somebody is soon bound to ask, [*Continued on page* 164]

Clothes Dryer works by radiant-heat glass panels. Cabinet has capacity for ten pounds and drying time is from 1 to 2½ hours. Height is 36 inches. Made of steel. Radiant Glass Appl. Corp., Norwich, N. Y.

Grill Well barbecues, broils and fries. Firebox stands in steel ash pan. Hanging side broilers hold steaks, hamburgers, etc. Steel frying pan controls draft on charcoal bed. Fletcher Enamel Co., Dunbar, W. Va.

NEW for the HOME

Electric Toothbrush delivers 120 up-and-down strokes per second. Brushes are interchangeable so whole family can use the machine previously available only to dentists. Toothmaster, Racine, Wisc.

Telephone Ear Pad acts as noise insulator and relieves phone pressure on your ear. It stays on phone by means of a dry adhesive surface on one side and can be washed. Gerrard Industries, Toronto.

Magic Leaf made of Silvanium removes tarnish and deposits silver on silverware. Place in dishpan with warm water and detergent. Discoloration removed by scouring. Paul-Reed, Charlevoix, Mich.

MI Tests the '52 Hudson Hornet

"Safest big car in America" is the way our Uncle Tom describes the Hornet, whose hop-up model he drove 107 miles an hour.

By Tom McCahill

Under the famous Dunlop pedestrian bridge at the start of the Le Mans course, Joe paces the Hudson.

HUDSON is a name I'm getting fed up with. On an average of twice a week during the spring, summer and fall months, I receive in the mail a complete list of the results of stock car races in all parts of the country. During this past year, before even opening the envelope I know that the name Hudson will top the winner's list nine times out of ten, which isn't too healthy a condition for stock car racing. The fans like to see every make of car racing against each other but when it becomes an almost foregone conclusion that one brand will walk away with the money, it takes the edge off the sport.

Hudsons have been creaming all makes of cars and in this lies a tale. The Hudsons are not the fastest cars on the track, they are not the lightest, and they are not the leaders in the acceleration department. So what cooks? Hudsons are ripping the feathers out of all other brands on one simple but oh so vital point. They are America's finest cars from the very important standpoint of roadability, cornering and steering.

On a half-mile, mile, or mile and a quarter track, the ability to corner plus top balance and steering control, plus excellent brakes, are all Hudson needs to smother

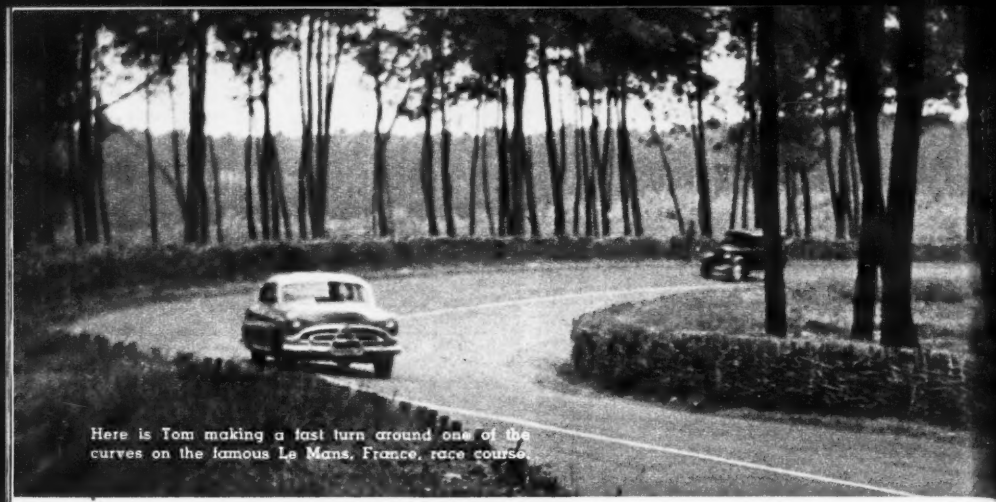
The "Queen Mary width" and low center of gravity of the Hudson give the car tremendous stability.

This Hornet, owned by sportsman Briggs Cunningham, stayed with many race cars around corners.

the rest of the country's output. The Chryslers are faster and several cars such as the 88 Olds and the Cadillac can outaccelerate them. But to stay with the Hudsons on a race course, these other cars must literally pull themselves apart in the corners while the Hudsons sail around with effortless ease. This same factor that makes them tops in stock car racing is also the reason why I rate the Hudson America's safest big automobile.

For some years now, I have been guilty of stating that this or that car did or didn't steer and corner well, without going into the full importance of steering and cornering. A recent letter from an irate reader woke me up to this. He states that he was tired of my high-speed roadability and cornering reports because he was more interested in a good, reliable, safe car. Being an average driver, he wasn't in the least interested in racing or high-speed cornering. I realized that I must have done some lousy writing because racing proves exactly what he wanted to know in the first place. A 250-mile stock car race will test the ruggedness and reliability of any car far better than 50,000 miles of normal driving. For example, the Plymouth has the finest racing record of any American low-priced car and if you check, as I have, you will also find that there is no car in any price class that has a better record of trouble-free service in general use. As to

With dual carburetors and high-compression heads, this stock factory hop-up is a real whirlwind. The car's normally fine cornering and road-holding qualities were much improved by export equipment.



Here is Tom making a fast turn around one of the curves on the famous Le Mans, France, race course.

the importance of steering and cornering, even at 40 miles an hour, let's consider the facts.

In about 90 per cent of all highway accidents, whether it be a head-on collision with another car, kissing a tree or telegraph pole, or mowing down a drunk, the driver just before contact tried turning to the left or right in an effort to avoid the crash. In that last-instant effort to avoid crashing, the cornering and steering ability of the car play a major part. In some cases it would be impossible in any car to avoid contact, but in others a fast, controlled swerve may mean the difference between life and death.

A car like the Hudson, that has fairly fast steering and cornering ability, will keep its feet under it and be a lot safer, even at 20 miles an hour, than a typical current Detroit balloon that just mushes and loses its footing under a fast wheel cut. Cars with good steering and cornering ability, like good boxers, are able to duck. The balloons, like the statue of Sheridan's horse, usually have to stand up and take it. Some day when the safety kids muster enough guts to face this situation, uncontrollable balloons will be banished from the highways. But as of now, the Hudson is America's safest car in my book.

The safest Hudson of all, and the fastest, is the Teaguemobile, so nicknamed for Marshall Teague, the well-known stock car race driver who has been cleaning up with this stock, factory hop-up. Hudson being a wide-awake outfit, it is possible to go into any show-room and order a Hudson Hornet with dual carburetion, high-compression heads, export shocks and springs and beefed-up wheels. The fact that these are all catalogue parts, available to any buyer, makes them stock—which is another reason for Hudson's success. The export springing makes the Teaguemobile as stiff as a clip joint check and the high-compression heads and dual pots add quite a few miles to the standard Hornet's performance. However, when race driver Teague does the assembly work he gets even more out of the car than the factory hop-up.

Teague, former NASCAR star and now AAA stock car champ, has what sort of amounts to the southern branch of the Hudson Motor Car Company at Daytona Beach. Here, before any big series of stock car races, you will find Teague, himself a master mechanic, at work on several or more Hornets. The engines on even brand-new Hornets are completely disassembled and every single moving part is matched and checked to exact factory specifications. Out of his huge supply of parts, Teague

On a Le Mans straightaway like this, Tom pushed the Hornet up to 107 mph. Along this strip, part of the 8.5-mile course, world's best cars raced.

SPECIFICATIONS

MODEL TESTED:
1952 Hudson Hornet hardtop convertible (export model)

ENGINE:
6 cylinder, L-head; bore 3 13/16 inches, stroke 4½ inches; piston displacement 308 cubic inches; dual carburetion; brake horsepower approximately 175; compression ratio 8.5 to 1

DIMENSIONS:
Wheelbase 124 inches; overall length 208 inches; tread 58½ inches front, 55½ rear; width 77¼ inches; height 60 ⅜ inches; weight 3,900 pounds; standard tire size 7.10x15; gas tank 20 gals

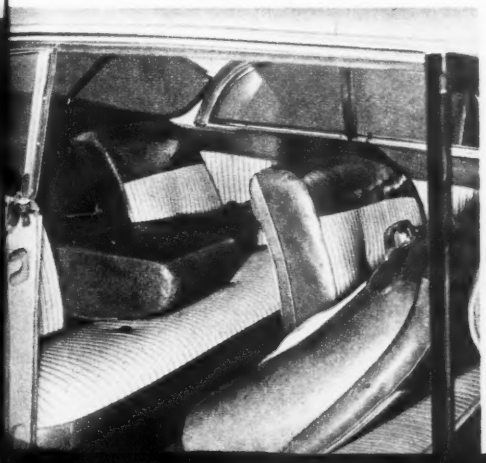
PERFORMANCE:
0 to 60 mph, 12.1 seconds
Top speed, 107 mph

may check as many as 75 valve springs before he gets a set that meets his rigid requirements. All crankshafts are checked for perfect balance and pistons are weighed to make sure each one matches all the others to the gram. Without altering stock specifications in the least or violating any race rules, Teague turns out unbeatable Hudson Hornets just through extreme attention to the smallest of details. No production manufacturer could possibly afford to do work this exacting and come out with a whole financial skin. But for Marshall Teague this extra work has paid off handsomely.

Last winter while shooting the breeze with Briggs Cunningham and Bill Spear in Florida, the subject of the Hudson's great racing success came up. Less than a half hour later I was on the phone, calling Tom Rhodes in the factory in Detroit to order a Teaguemobile for Briggs and one for Bill, with all the extra equipment. I left Florida shortly afterwards and never saw either car until Briggs turned up with his as a staff car in his entourage at the Le Mans race. To cut a long story to the bone, Briggs was not too happy with the car as it came from the factory so he had turned it over to Marshall Teague to give it a dose of Daytona magic. Teague installed the very engine he had used in the Mexican race last fall when he finished sixth—and this was the Teaguemobile I got to test in Le Mans.

To say the car had been broken in when I got it would be the understatement of the year. It had been quartered and drawn by the entire Cunningham army, including the boss. Starting in Florida these gentle country folk [*Continued on page* 179]

Extra-wide rear-seat armrest gives passengers lots of comfort. Uncle Tom believes the Hudson is one of the best-built automobiles in America.



Tom, who stayed awake during the entire 24-hour race at Le Mans, looks a little pooped as he demonstrates the width of the Hudson's front seat.

MI Tests the Sunbeam-Talbot

Winner of the recent car-killing Alpine Rally, this British "mountain goat" has a lot of good qualities, our expert discovers.

By Tom McCahill

THE British Sunbeam-Talbot has just proved itself once again a genuine, first-class mountain goat by winning the team and class cups in the 1952 Alpine Rally. This is a repeat of wins in 1948, 1949 and 1950 in this clambake and, for those who are wondering what it's all about, here's a pinhead sketch.

Every year almost 100 cars, many of them factory entries, start out from the French Riviera and head for the Alps. During the next six days, until their return to Cannes, these cars race up and down every important Alpine Pass in Europe, covering 2,055 miles. Having recently driven over much of this course, I can fully appreciate what an Alpine win means. In the first place, a winner must have a wagon-load of dig (acceleration torque) and it must have brakes second to none. The cooling system must be the very best to keep from blowing steam all over the edelweiss, as some of these steady climbs go on for miles and most of the turns are so angled that you are forced almost to a standstill to get around on your

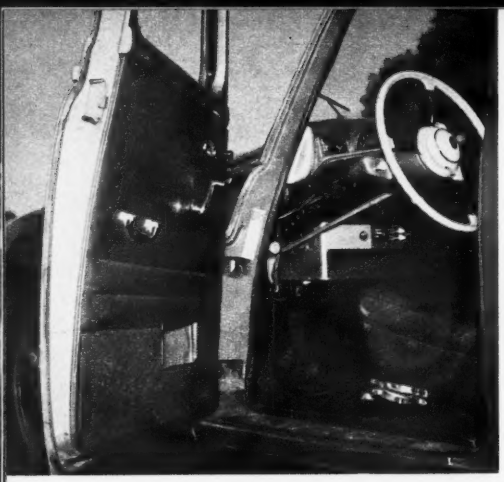
Making a hard turn on one of the gravel roads near his New Jersey home, Uncle Tom gives the Sunbeam the business. Over the Alps, the car finished 1-2-3 in its own 2-to-3 litre class.

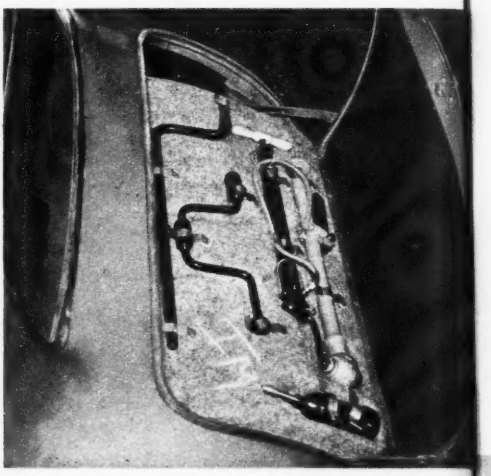
The Sunbeam-Talbot's four-cylinder, overhead-valve power plant displaces 138 cubic inches and develops 70 horsepower at 4000 rpm. Despite its 3,000 pounds, car can do almost 80 mph.

upward climb. This literally beats the brains out of inferior cars and puts the best on notice that a blow-off is just around the corner. In a recent passage across the St. Bernard Pass from Switzerland to Italy, the car I was driving nearly froze three times from overheating and I was forced to pull over on the narrow ledge for long stretches to let it cool before going on.

The fact that this is the fourth time Sunbeams have walked off with their class bacon in this car-killing rat race, should automatically win for them the cast-iron Tyrolean hat. I was supposed to drive on the Sunbeam team in this event this year with John Fitch. I got crossed up when one of my other magazine assignments, which was to keep me busy almost until starting time, fell through. Since I couldn't think up a single hot reason why Fawcett should support me in Europe an extra three weeks, I was forced to return home before the Rally started. Unfortunately, Fitch's car collapsed a rear wheel bearing and failed to finish. But Sunbeam finished three cars in the winning circle and walked off with the team cake, a really outstanding victory.

In the United States the Sunbeam-Talbot sells for approximately $2,700 delivered. It comes in either a four-door sedan, the model I tested and the one that was used in the Alpine Rally, or in a nice-looking two-door convertible. The engine is a 138 cubic-inch, four-cylinder, overhead-valve job developing 70 horsepower at 4000 rpm. The car weighs approximately 3,000 pounds and this is perhaps the reason it in no way resembles a bomb on straight stretches. For a two-litre plus job it is on the slow side. At Daytona Beach last winter, 73 was all a highly-





Note the bottom-hinged door and the under-seat ratchet for three-way adjustment of front seats (top photo). Sunbeam-Talbot's genuine leather upholstery compares with Rolls-Royce's, Tom says.

Sliding roof and clock mounted above windshield (top photo) are two attractive features. Back of the trunk lid can be folded down to reveal a fully-equipped, recessed compartment for tools.

tuned Sunbeam could average. On a good hardtop, level road after a long build-up it will just reach a point where on a corrected speedometer it will tickle 80—but any more than tickle it won't do.

Zero to 60 takes 21.3 seconds (about the same as a 1952 Chevvy Powerglide) and 0 to 30 shows pretty good jump at 5.5. The car has a four-speed transmission and, believe it or not after looking over the lukewarm performance figures, it has a remarkable lot of get up and go in second and third gear once you get it rolling. This dig-ability in the middle gears undoubtedly accounts for a lot of the Sunbeam's success in the Alps where you seldom if ever get a chance to really let a car out in high.

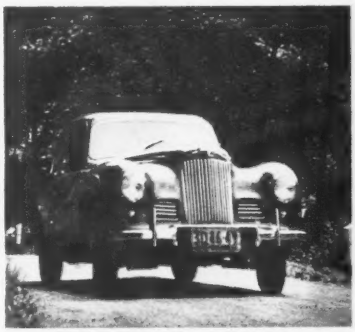
Taking a poll of several friends during the test, I found them divided as to the looks. I think the Sunbeam-Talbot is a neat-looking basket and the genuine leather upholstery is of real mouthwatering quality, similar to that of the Rolls-Royce I tested (August 1952 MI). All the appointments, including the sliding roof, are excellent but I think the steering wheel would be better if it were fully adjustable like that of so many other English cars.

Bill Parker brought a well broken-in Sunbeam out to my place for a workout. The first tests we made were on my back-breaking hills and tortuous roads which simulate a miniature of the Alps where these cars have shone so highly. As a comparison, I ran my Mark 2 MG with it. On given hand signals, we made checks in

second and third with both cars underway and, though my MG is as hot as a pistol, neither car could gain an inch on the other in either gear on more than a half mile of steep climbing. Through the gears, winding the MG all the way, the Mark 2 walked away from the Sunbeam. But on a hard steady pull in second or third it was a stand-off.

The Sunbeam has a second gear of 9.6 and a third gear of 5.8 with a top of 3.90. By today's standards, the Sunbeam has a long-stroke engine (bore 3.18, stroke 4.33) and this is responsible for most of its lugging torque under a hard pull. The American Nash Ambassador power plant is one of the few remaining engines in this country with a long stroke and in my recent Nash report (September 1952 MI) I pointed out that in spite of its comparatively small (for a big modern car) horsepower and torque, the Ambassador is one of the best hill-climbing cars I have tested.

To simplify this, the modern short-stroke engine, developing terrific horsepower through high rpm's, doesn't get as big an explosive charge to fire on each cylinder as the long-sucking, tall-stroke job. Under a steady load, the biggest charge in the chamber will have the most pull when climbing a hill in any one gear. By the same token, in any modern engine you can wind up through gears and accomplish the same thing or more— [*Continued on page* 181]



SPECIFICATIONS

MODEL TESTED:
1952 British Sunbeam-Talbot four-door sedan

ENGINE:
4 cylinder, OHV; bore 3.18 inches, stroke 4.33 inches; piston displacement 138 cubic inches; four-speed synchromesh transmission; brake horsepower 70 @ 4000 rpm; compression ratio 6.45 to 1

DIMENSIONS:
Wheelbase 97½ inches; overall length 167 inches; tread 47½ inches front, 50½ rear; width 62½ inches; height 59 inches; weight 2,954 pounds; standard tire size 5.50x16; gas tank 12½ gals

PERFORMANCE:
0 to 30 mph, 5.5 seconds
0 to 50 mph, 15.1 seconds
0 to 60 mph, 21.3 seconds
Top speed, 80 mph

Uncle Tom poses on the lawn of his Revolutionary farmhouse in the Sunbeam-Talbot, whose lines are slightly reminiscent of our own pre-war Packard.

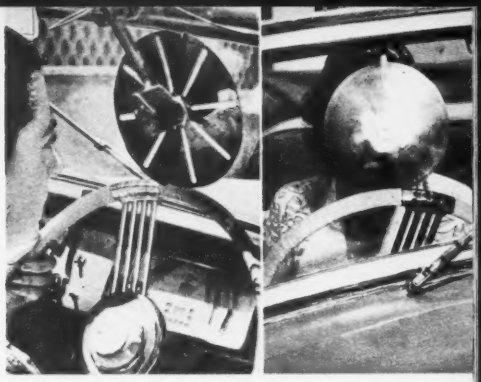
MECHANIX ILLUSTRATED

PIN-UP CAR

1920 Mercer Raceabout

Owner: Herbert Royston of West Los Angeles, Calif. Engine: 4-cylinder, L-head, 3¾-inch bore, 6¾-inch stroke, develops 70-plus horsepower. Guaranteed to do 75 mph when new. Exhaust-powered, keyboard-controlled "Gabriel" horn plays tunes. Car's color: green. Original cost: $4,200.

Hydrocaps. replacing conventional battery caps, contain a palladium catalyst to convert escaping gases back into water, prevent corrosion. Ind. Research, Miami.



Spinning Visor has eight sectors turned by small motor. It acts like camera shutter, interrupting vision to reduce headlight glare. Alassio & Co., Genoa, Italy.

WIN $25.00

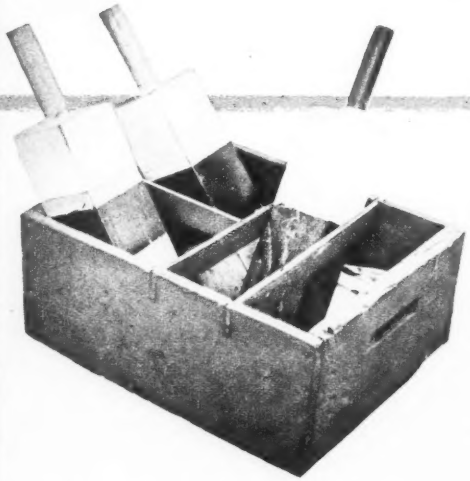
Send in a sharp, glossy photo of a snazzy car, old-timer or new, posed as at left with owner or a pretty gal. Include self-addressed, stamped envelope (just in case) and all vital statistics about car and owner. Mail to Pin-Up Editor, MECHANIX ILLUSTRATED, 67 West 44 Street, New York 36, N. Y.

NEW for the ROAD

Freightlifter flexes its steel muscles and lifts a gasoline truck high in the air. Claimed capacity is 18,000 pounds which it can raise up to 20 feet. Made in Britain.

Traffic Tower of glass in Hanover, Germany, enables policeman to watch traffic, regulate lights by remote control and to call violators to order over a loudspeaker.

On the Trail of the Rail



Bird markers, painted red and white, are thrown near the downed birds for location after shooting.

WHAT does the word *railbird* mean to you? To most sportsmen it means a shifty-eyed individual in a loud, checked suit sitting on a racetrack fence watching the bangtails go by. That's because they don't know any better. And it's their loss.

The railbird, or sora, is one of the most desirable and tasty morsels that comprise our game-bird population. But to hunt him successfully you must know where and when to look for him. Most veteran bird hunters wouldn't recognize a rail if it ran up and pecked them. And also a specialized technique is required because this little bird chooses some of the toughest areas to call his home.

Railbirds are migratory, beginning their

The sora's a tiny bird but a tasty one. And it takes quick shooting and strong pushing to nail him.

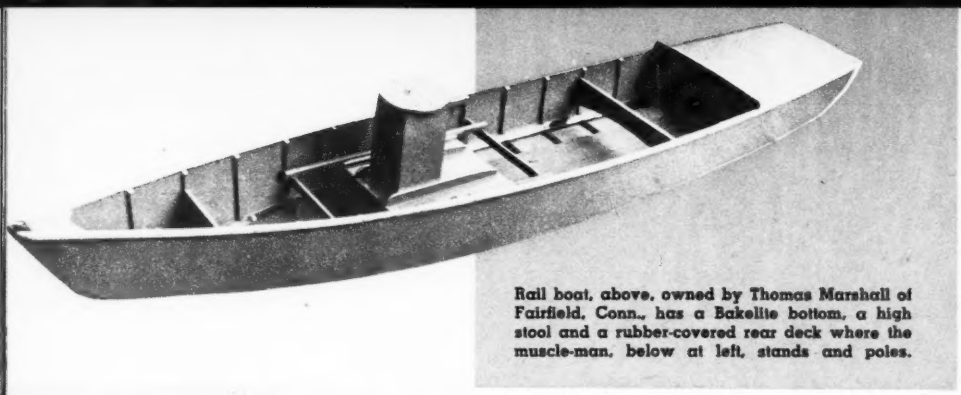
By Raymond R. Camp
Rod and Gun Editor, N. Y. Times

flight south in mid-August, and might be classed as semi-aquatic because of their preference for the wild rice or wild oats of tidal rivers, estuaries or flats. They can be found also in good numbers on the marshy margins of inland rivers.

The coastal shooting is more interesting, however and while it does not attract a large number of shooters, this is due more to ignorance than any other factor. Many who place rails in a prominent place on their shooting list do so because the season on these birds opens early in September, a period when most other forms of hunting are out of season. Those fortunate enough to live within a reasonable distance of a good wild-rice flat can be certain of good shooting, provided they have their own railboat or can locate a guide willing to push them through the flats.

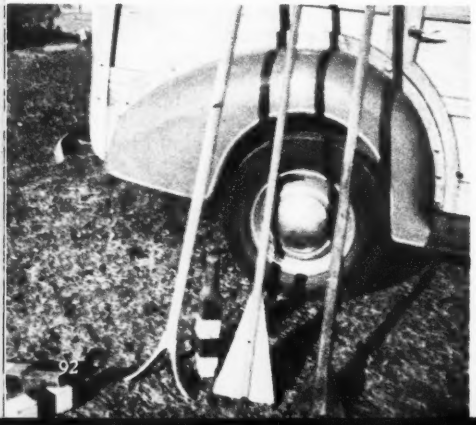
On coastal areas the shooting is limited to the last two hours of the flood tide and the first two hours of the ebb, for it is only during this brief period that a boat can find enough water for flotation on these flats. The typical railboat is a light, shallow-draft skiff with a hip-high perch in the bow for the shooter and a poling platform in the stern for the pusher. This craft is pushed through the tangle of tall wild rice with as much commotion as possible, and the rail flush out ahead of it.

The rail is not a fast bird nor is it as erratic in flight as the snipe. It emerges only briefly from its cover, skims along the top of the rice, then drops back in. The shooter



Rail boat, above, owned by Thomas Marshall of Fairfield, Conn., has a Bakelite bottom, a high stool and a rubber-covered rear deck where the muscle-man, below at left, stands and poles.

If you're going to hunt railbirds, you'll need the poling equipment, below, for making your way through the marshy areas where they're found.



must be constantly alert, watching to either side and ahead. Once a bird is dropped, the problem is not solved, for both pusher and shooter must mark it down exactly. Wild-rice tangles are thick and the color of the bird merges with its habitat.

Some pushers carry a number of markers. These are foot-long billets of light wood, three-by-three, painted in alternate stripes of red and white and having short handles. When a rail is brought down, the marker is thrown as accurately as possible at the spot where it dropped and so the bird is marked more easily.

On his first trip, the rail shooter confronted by the eight-foot stand of rice wonders how the pusher will ever force a boat through such a tangle. An experienced pusher, however, can keep his boat moving at a pace almost equivalent to a normal walk.

One of my first railbird excursions, many years ago, was on the Maurice River flats of southern New Jersey, a mecca for railbirds for more than a hundred miles around. At that time there were a score of pushers available in Mauricetown and an old but comfortable inn provided between-tide accommodations.

After pushing the flats for a half-hour with fair success, we heard a shot about a hundred yards to our right but due to the tangle of rice, the shooter was not visible. Close on the heels of this shot came a howl of rage from another shooter.

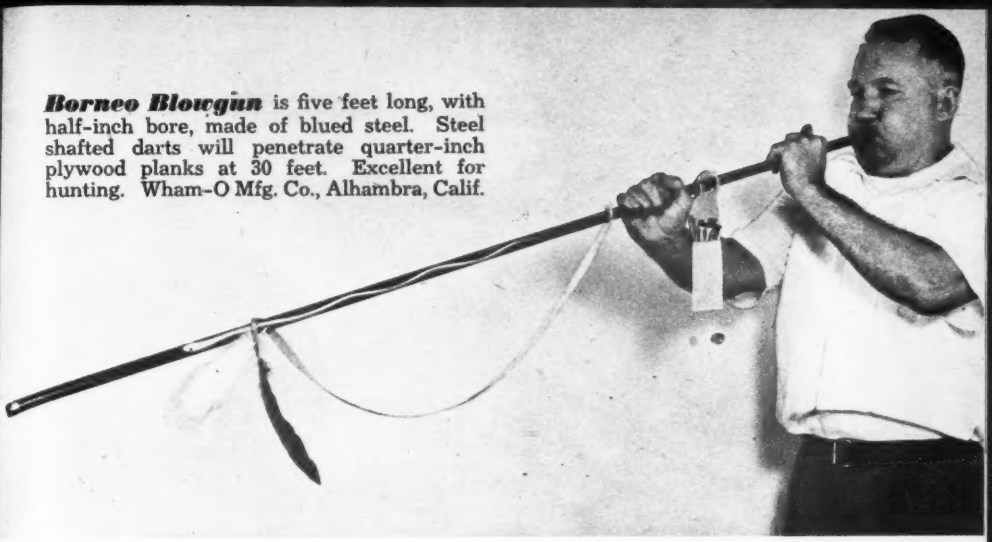
"Watch where you're shooting," he roared. "You peppered me with that load."

A few moments later there was another shot, and another scream of invective, this time followed closely by two shots.

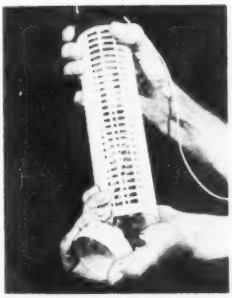
"There," the voice cried, "see how you like a dose of shot."

The answer was a double from the first shooter.

The two shooters exchanged a dozen shots each and we later learned that the unlucky guides [*Continued on page* 183]



Borneo Blowgun is five feet long, with half-inch bore, made of blued steel. Steel shafted darts will penetrate quarter-inch plywood planks at 30 feet. Excellent for hunting. Wham-O Mfg. Co., Alhambra, Calif.

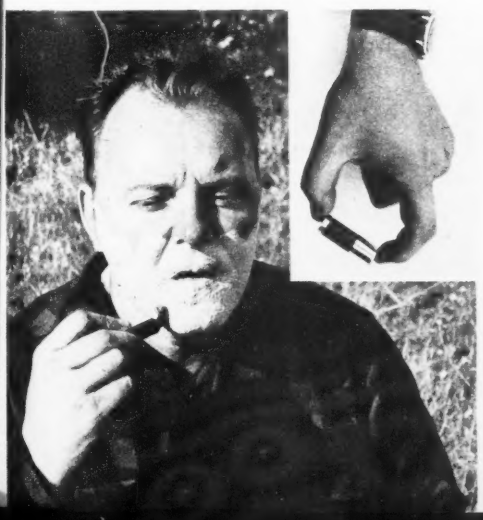


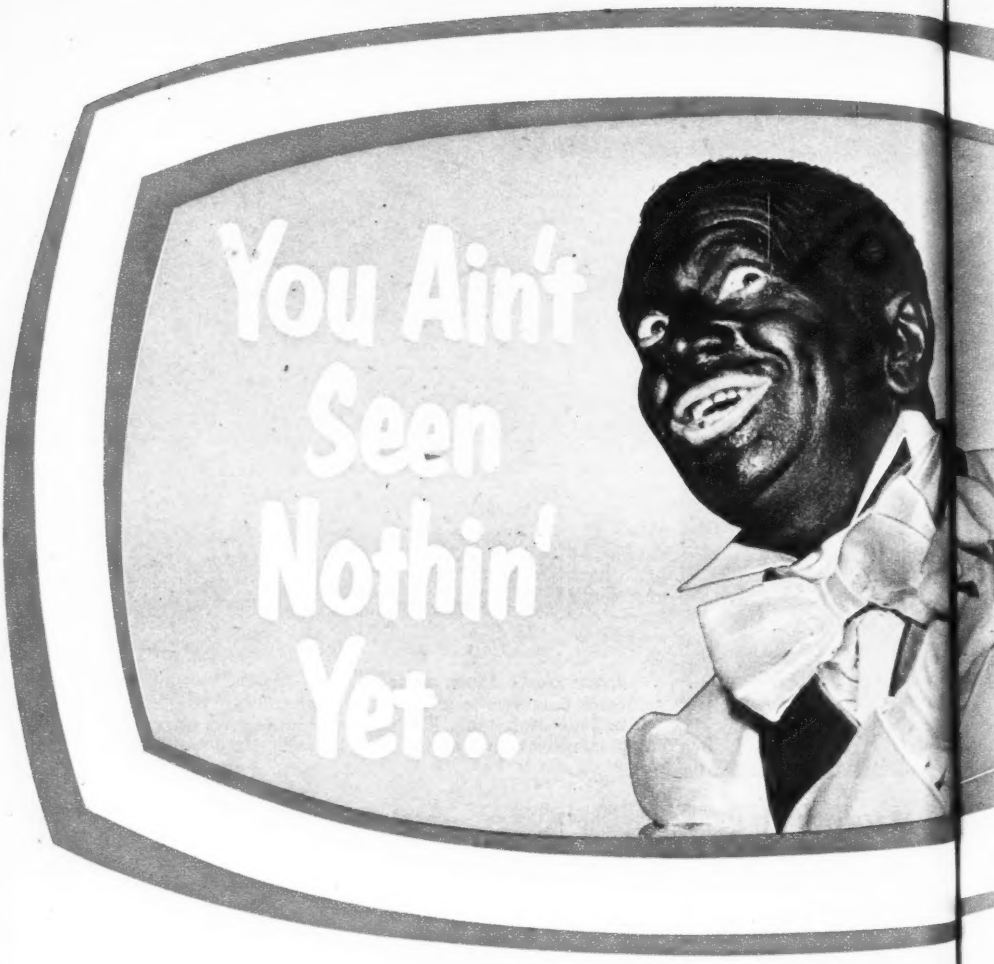
NEW for the SPORTSMAN

Live Bait Box made of light plastic has latticework openings to allow for water circulation. Fastens to belt and holds 12 to 15 medium-sized minnows, shrimp or crawfish. Parker Plastics, Houston, Texas.

Little Shaver is a small folding brush of the type sold in photographic stores to clean camera lenses. It is as large as a lipstick tube, takes little space in a duffle bag, but will work up a good lather quickly.

Golf Buggy is modeled by Babe Didrikson Zaharias for pro George Howard in Seattle, Wash. Car is electric, has foot brake, hand brake and steering bar. Bags hook on sides. Buggy is custom made.





A TV camera, right, in an advanced battle position, scouts for headquarters in the rear. Signals are flashed by mobile field transmitter.

RCA's new eight-pound camera on the eyepiece of a microscope shows class an enlarged microscopic field on an ordinary receiver, right center.

At Washington University graduation last year an overflow crowd attended. It saw the graduates through TV eyes located up front, far right.

When television really starts rolling, modern electronic miracles will enable it to play a major role in every phase of your life in addition to providing your home entertainment.

By Henry M. Lewis, Jr.

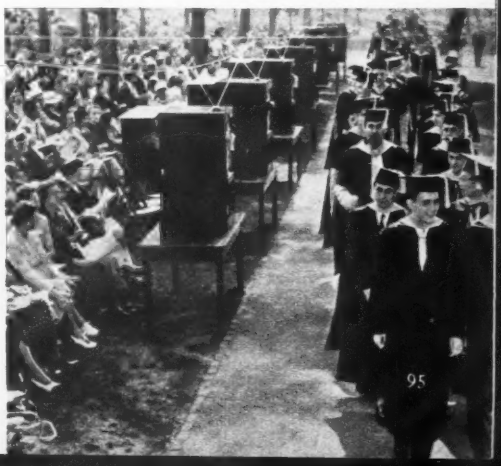
LUCILLE Ball, Arthur Godfrey and Uncle Miltie may have been hogging the TV spotlight but a new type of program is just around the corner.

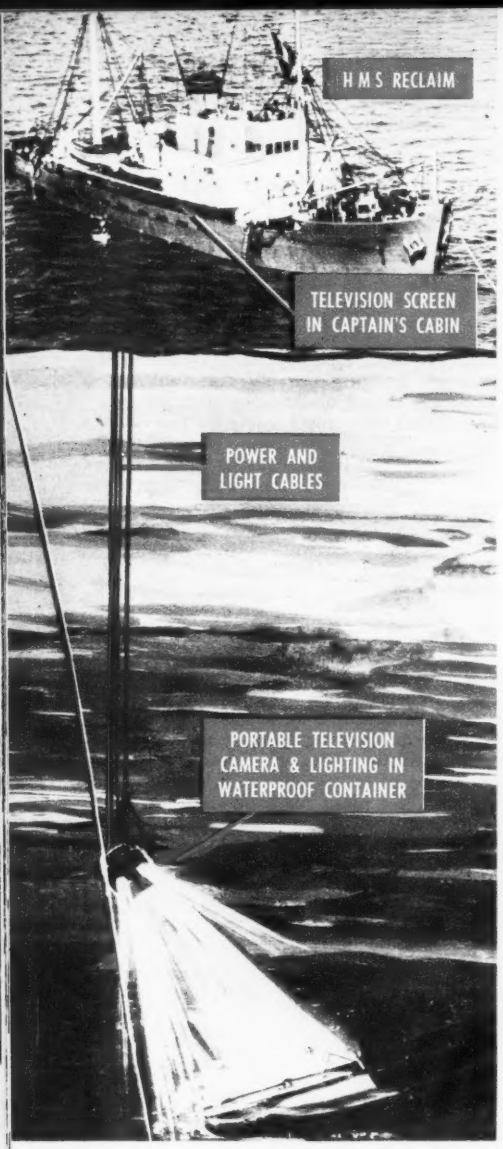
The same brains that were responsible for television's becoming your master in your own home now are working night and day to make it your servant everywhere else. Even now it has begun to work for you in your office, farm, factory, classroom, bank, super-market, department store, neighborhood theater and a whole host of other places too numerous to mention. Why, it'll even work for you in a traffic jam!

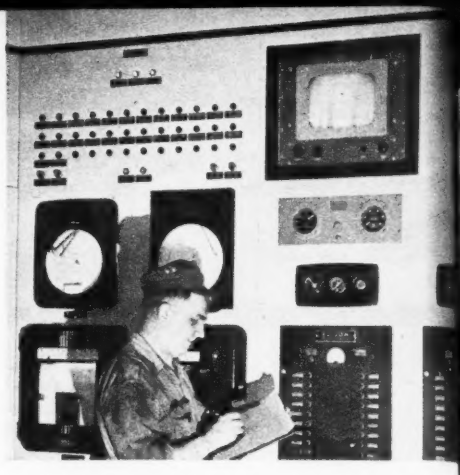
Let's take a look at tomorrow. You're going shopping and your route takes you through a vehicular tunnel under a broad river. There has been a smashup before you reach the tunnel, but traffic doesn't choke up either entrance. A squad car, wrecker and ambulance are on the scene. How? Because a dispatcher at police headquarters saw the accident on a television set.

In town, you drop in at your bank to cash a check. There's a new teller in the cage. He doesn't know you and your signature card is in a central file room elsewhere in the bank. He picks up a phone and speaks your name. In just a few seconds, the record of your account with your signature appears on a small television screen beside his money drawer. He counts out the money and hands it over.

Now you decide to spend the money in the biggest department store in town. As you enter, you are met by another television set just inside the door. You stop, look and listen as an impeccably groomed salesman on the screen demonstrates the bargains of the day

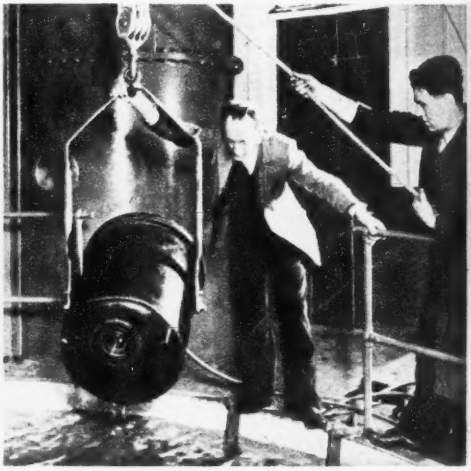






Con Edison, New York, trains TV on its smoke stacks to determine efficiency of its boilers. Picture is piped to receiver in boiler room.

British underwater TV camera was used to locate sunken sub H.M.S. Affray at bottom of English Channel. Left, how it can be used in salvage.

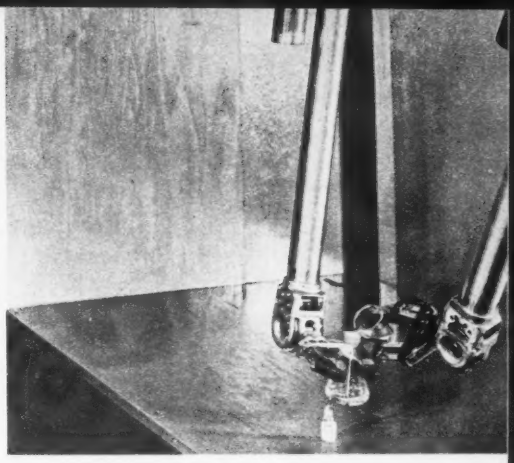


and tells you on which floors they may be found. As you stroll between the counters, you discover that there are other TV sets placed strategically throughout the store, carrying the same program. Its origination point, or studio, is a fifth floor annex in the store itself.

If you live in Boston, Philadelphia or Atlanta, to mention only a few large cities, there's no need even to wait for tomorrow. You already have seen this merchandising miracle at work.

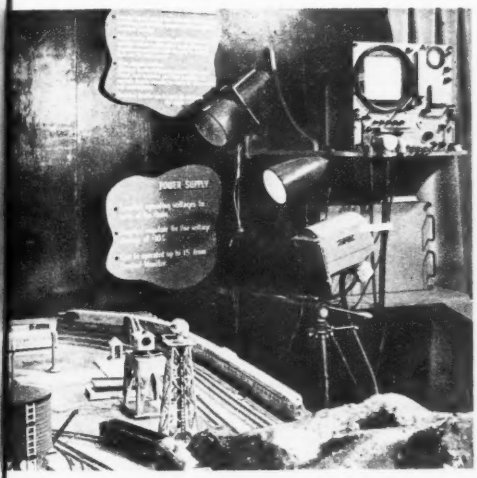
In Boston, for example, if you buy at Jordan Marsh, you've probably seen some of the Hub's prettiest models displaying the latest fashions and demonstrating interior decorations, cosmetics, furniture and fabrics on receivers in the store. Not only on television—but in full, vivid color!

Gimbel Brothers in Philadelphia, too, has used a storewide television system for displaying merchandise for shoppers who sit comfortably before large screen receivers. And in Atlanta, when a city-wide



Dumont stereo-television was developed in conjunction with Atomic Energy Commission. Operator at left manipulates remote controls to pour liquid into flask from beaker, right. Stereo camera picks up double image and transmits the pictures to the TV screen where operator views process in three dimensions.

Model setup demonstrates chain which can be used by railroads to monitor traffic control including tracks, switches, semaphores and crossing gates.



Jordan Marsh, Boston department store, was one of the first to use Remington Rand Vericolor to show fashions and merchandise remotely to shoppers.

transit strike virtually halted business, Rich's department store went a step further and beamed their wares into Atlanta homes through a local television station. Housewives watched and phoned in orders that were promptly filled by an emergency messenger service.

But let's go back to that money you drew from the bank. Perhaps it was for your son's college tuition. Television will work for him, too, in many wondrous ways before he receives his diploma.

If he's a science student, particularly, television is his oyster. In class, he'll no longer have to squint with one eye through the eye-piece of a microscope to study tiny organisms. A television eye no larger than a home movie camera will do this for him. Seated comfortably at his desk, he'll see the entire microscopic field enlarged on a television receiver that serves the whole class at once. The tiny micro-field becomes a huge blackboard before the instructor's pointer. [*Continued on page* 99]

hobby
HALL OF FAME

Cowen gazes fondly at the 1905 B & O electric locomotive that launched him in the train business. His model collection in N. Y. dates back to 1900.

Joshua Lionel Cowen: TOY TRAIN TYCOON

YOUNG Joshua Lionel Cowen was an incurable gadgeteer but he never was satisfied with the way any of his gadgets worked. He was always rebuilding, improving and finding new uses for them. Miniature engines were his main interest, however, and he built dozens of them. Some of them he equipped with wheels so they would run along the floor. Then he got the idea of making them run on tracks like trains. One day he took a home-made electric engine which he had used to run a fan and connected it to one of his models. Thus in 1900 was born the first Lionel electric train which since has blossomed into a million-dollar industry.

This first crude car sold for $4.00. In 1905 he built an electric replica of a unit used by the B & O Railroad between Baltimore and Washington. That year the public paid him $8,000 for his trains. Now, at 71, Cowen is still active and likes nothing better than to play with the latest mechanical contraptions of his toy empire. •

Latest Lionel items are the Astro-dome car (1), tower with switchmen who run down steps to signal at crossing when trains approach (2), station house with two baggage men who run electric cars in and out (3), signal bridge with red and green lights which operate automatically (4), loader with moving chute which deposits barrels in waiting train (5).

You Ain't Seen Nothin' Yet

[*Continued from page* 97]

But what about his other cultural courses, you say? Classic art, for example. Or geology. No more study time lost plodding out to the museum or on field trips. First hand glimpses of important specimens will be "piped" into his classroom by college-owned television units. More time for learning, less for leg work. In the same way, television will serve any branch of learning you can name by bringing every remote need into the classroom itself.

Even on graduation day, you'll find television working for both of you. You're a little late in arriving—part of the overflow crowd outside the chapel. But don't worry. You won't miss a thing. Those big boxes rimming the quadrangle of the campus are television receivers. Cameras inside the chapel will bring you the entire ceremony.

And now that it's all over, whither goest the young man? To medical school, perhaps. If he does, what a tale of modern magic he'll have to tell the family doctor during some vacation visit!

Student doctors, he'll find, no longer sit in the classic amphitheater and wonder what tissue the surgeon—yards away from them—is cutting. Your son will be only a scalpel-length away from the operation he's observing. Through the magic of color television, he'll watch the surgeon's technique and the intricacies of the process.

Through a small microphone concealed in his sterile mask, the surgeon will give a running commentary on his procedure as a color television camera transmits a close-up view of his work to the large screen receiver your son is watching. This may be anywhere from several feet to miles away.

A few months ago, a Pacoima, Calif., youth underwent a delicate heart operation with a color television camera peering over the surgeon's shoulder. Doctors in Los Angeles, Chicago and New York observed the entire procedure through "closed-circuit" facilities provided by the CBS Television Network and Smith, Kline & French Laboratories, Philadelphia pharmaceutical house credited with pioneering in medical teaching by television. This life-and-death drama was not broadcast to home receivers but it made medical history.

Most of the startling new developments in television never reach home screens, however. They're being made ready to serve the private needs of business, industry, medicine and education, the government, the military—and you.

Even now, the armed forces are old hands at developing new television techniques.

The Army Signal Corps already has demonstrated a video-telephone—forerunner of the device that one day will make it possible for you, at home, to see the person with whom you are talking on the phone.

In Army field maneuvers, camouflaged television cameras have been used to scout advanced positions for headquarters personnel far behind the "front lines."

The Navy flier today learns many of his flight fundamentals by television. A video camera trained on the cockpit of a plane relays a picture of check-out procedure to a classroom of student pilots far from the airfield. Navy Air Reservists at Sands Point, L. I., have used this technique.

Both the Army and the Navy use television in aerial reconnaissance. The camera peers downward from the plexiglas nose of the "recon" plane and relays back to headquarters the same aerial view seen by the pilot. For close-ups another camera in the plane's waist is equipped with a telephoto lens.

On the "home front," meanwhile, engineers are harnessing television in as many diverse fashions to meet countless business and industrial needs.

Sporting events are projected on large theater screens, using special equipment, with viewers paying an admission price while the shows are "blacked out" for home viewers. Purpose of this venture is to block the inroads promoters believe home television is making in their gate receipts.

In another application, the audience in New York's Paramount Theater was treated to a surprise when a Navy boxing show was flashed on the screen in little more than a minute after it was filmed, via television. A complicated mechanism processed, dried and projected the film in exactly 66 seconds!

Vidicam Pictures Corporation of New York City, motion picture producers and supplier of film programs for commercial television broadcasting, employs industrial television equipment in an original process that cuts the company's production time by more than 30 per cent according to Larry Gordon, Vidicam president, who devised the application.

"The Vidicam system," says Gordon, "enables three motion picture cameras to shoot a scene simultaneously from different distances and angles. Television cameras are mounted to the finders of the 35-mm or 16-mm motion picture cameras and are aligned for parallax. The director then can observe what each camera is shooting by means of three monitors grouped as a unit, and he can select the picture of his choice at any time. Thus, he can actually edit his picture as it is being shot."

Other industrial users are turning to new developments in television that in months and years to come will save lives as well as large sums of money.

Cameras replacing human observers at hazardous operations was demonstrated most effectively by one aircraft engine manufacturer who wanted to watch closely the functioning in its initial test of an expensive, hand-made first model.

Strong retaining walls were built around the engine. Another also guarded the engineers in case the engine exploded. Television equipment was installed for a remote, close-up look at the test.

The first test was to be a five-second burst of the engine but just as observers were about to order it fired, the TV camera detected a leaky valve that could not be seen through an alternate monitoring device—an elaborate system of mirrors set up to relay the operation from the engine to watchers a considerable distance away.

The leak seen by officials and engineers on the TV monitors—but not detectable through the mirrors—created a dangerous fire hazard that might have wrecked the test unit. Although the defective valve opened only seven-eighths of an inch, it was seen clearly on the video screens.

More recently, color television has been employed in similar tests on jet engines. In addition to permitting engineers to observe performance without exposure to intense heat and noise, the colors in the exhaust flames—important in judging performance—also can be seen.

The development of stereo, or three-dimensional, television by the Remote Control Engineering Division of Argonne National Laboratories, the Atomic Energy Commission's midwest installation, in cooperation with the Allen B. Dumont Laboratories, provides a harmless method for working with radioactive materials.

In this life-saving refinement, the scientist, using remote control devices at a safe distance from his project, works before a television receiver that monitors his mechanical "handling" of radioactive substances.

These are just a few instances of the countless ways in which John and Jane Doe are becoming the wide-eyed beneficiaries of what V. K. Zworykin, industrial television specialist of the RCA Laboratories Division, has termed "an extension of human sight" that seems destined to revolutionize every facet of modern civilization. And new applications are unfolding faster than they can be logged for the record.

British scientists have even developed under-sea television, an invaluable aid in salvage operations and for spotting submarines. A portable television camera and complete lighting system encased in a waterproof container are lowered to sea bottom by power and light cables. The ship's captain scans the ocean floor on a television screen in his cabin.

Here at home, and in the light of the times, Civilian Defense forces in progressive communities already are planning to use television to supplement the work of neighborhood wardens. Camera chains set up between the various warden posts and headquarters will make available manpower go farther.

Law enforcement agencies are finding closed circuit television a boon in their war against crime. Police departments send video photos all over the country for criminal identification. And in some prisons, television cameras guard cell blocks. Receivers are located in the warden's office and on the desks of subordinate officials.

So simple are these "industrial" refinements of television, in fact, that engineers predict the day will come when miniature chains will serve common household uses.

Tiny cameras will monitor home heating devices and other utilities, tell you who's at the front door when you're in the cellar or the attic, prevent fires, thwart burglaries, even watch the baby when you're busy in another part of the house.

Certainly, technical simplification of the television principle (the cathode tube and coaxial cable) is an accomplished fact. But how soon, you ask, will this "closed-circuit" video be in common use?

Two factors will have to determine the answer: availability of materials and the refinement of cost. But both will come as sure as night follows day.

At present, a closed-circuit color television installation runs in the neighborhood of $25,000 for the basic equipment; a black-and-white system can be put into use for less than $10,000.

A long way, you say, from these figures to the small businessman's pocketbook. Even farther from yours, for personal use. To be sure. But look back a few years. A very few, in fact.

When the first television receivers came out, the set that costs $100 today brought many times this amount. Every technical advance commands luxury prices until the novelty wears off and quantity production lowers the tariff.

Engineers and economists agree that there'll be a proportionate reduction in the cost of closed-circuit television, too. And when it comes, it'll be as common as the telephone and ten times as useful—in every walk of life. •

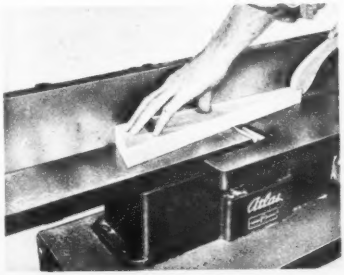
Tapered legs and bold 3½-in. rails give the table a modern appearance. When cutting dadoes in rails, leave about 1/32 in. clearance for inserting the plywood top.

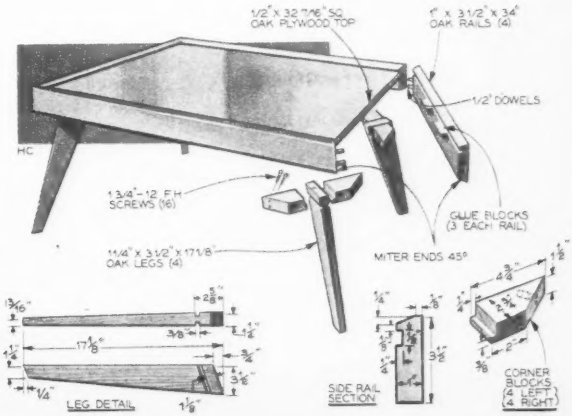
Oak Coffee Table

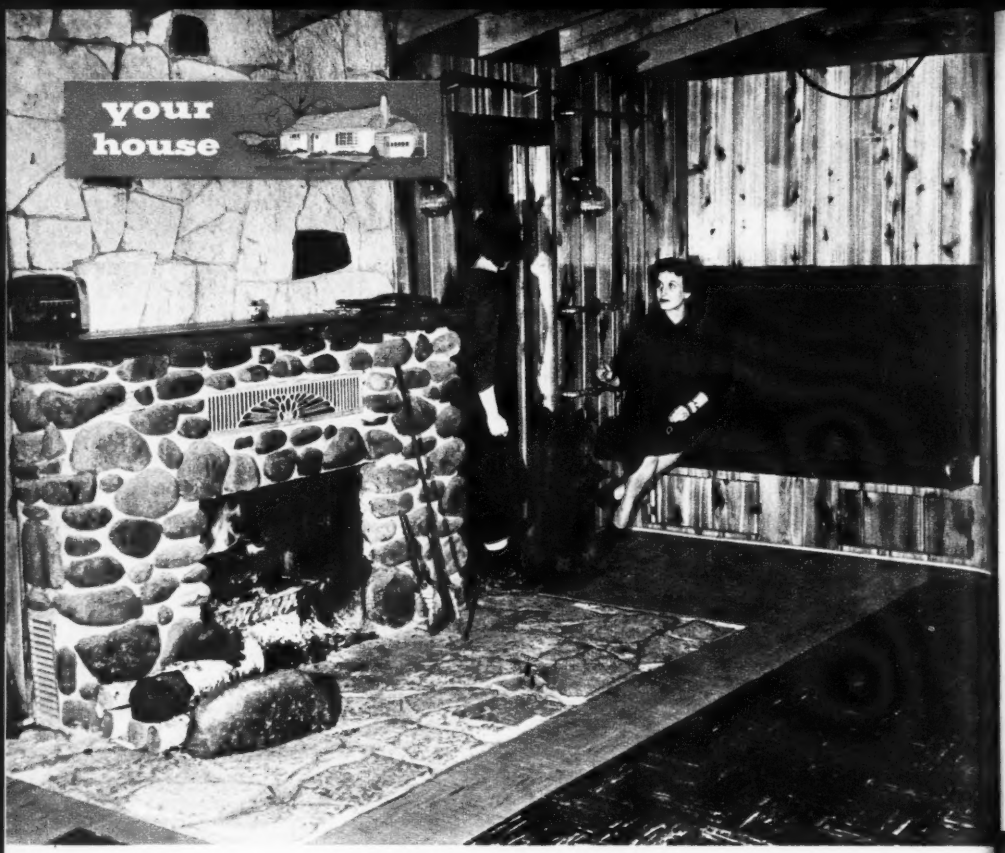
IF you have any spare ½-in. plywood around, here's an excellent way of putting it to use as a handsome table top. After cutting the top to the dimensions shown, cut rails, miter the ends, and make the dadoes for the top. Chamfer rail tops with a jointer, if you have one, then bore the dowel holes.

Assemble the top and side rails, gluing the corner joints and clamping firmly overnight. Do not glue the top. Taper the inside of the legs, then taper each leg thickness on a jointer. Be sure that all four legs are identical, then cut dadoes for the corner blocks. Fasten the corner blocks and glue blocks with glue and screws. Sand the entire unit before finishing. This table was finished by brushing on a coat of white filler which was wiped off in about ten minutes, then covered with shellac. •

Leg taper is cut on jointer by lowering table slightly, cutting series of steps in the leg, then running the entire leg through. For safety's sake, always use a push stick, as shown.







Handsome interior boasts rugged fireplace, cedar paneling. Top bunk may be lowered to form a couch.

M.I.'s Vacation Home

PART TWO

In this installment our husband-and-wife team finish building their lodge. Emphasis is on the interior.

By Jane and Woodrow Jarvis

LAST month's installment on building the MI Hunting Lodge covered the major exterior work. In this second and final article, let's consider the exterior and interior trim, and all the finishing touches. The photos on the succeeding pages are numbered to follow the sequence which began in the first article.

Long before we started construction, we began planning for the interior. The kitchen in particular seemed to promise substantial returns for some careful thought. There wasn't much space available, and we wanted to exploit it to the fullest. The advice of experts was indicated, so we wrote the Westinghouse Electric Corporation at Mansfield, Ohio. Their design department suggested a kitchen that would have everything, that fitted into the space requirements and that provided a maximum of working surface.

To the left of the sink is a 40-gallon table-top hot water heater and an apartment-size range. To the right is a 6-ft. upright freezer and an under-the-counter refrigerator. The surfaces of the heater and refrigerator provide a surprising amount of working space to supplement the sink area, and the freezer is a money-saver in this bountiful land of fish and game.

The space-saving design of the lodge sets the kitchen apart and yet permits it to be included in the social center which revolves around the fireplace and bunks. This greatly pleases Jane, who says housewives are tired of being banished to the kitchen when company comes for dinner. And with the electric range, she can set something cooking and forget it for a couple of hours.

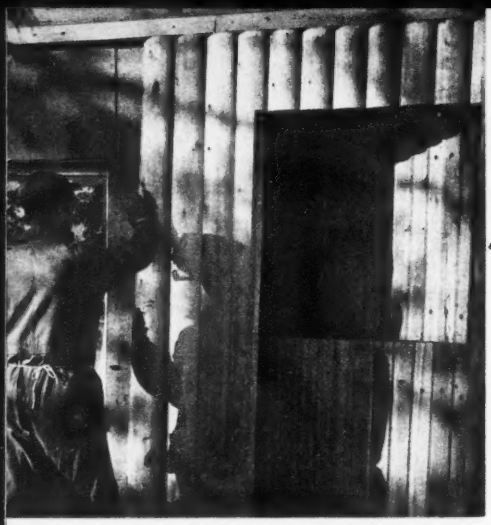
Installation presented no baffling problems. We received the very best cooperation from the power company serving our area, the Cloverland Electric Cooperative, an REA outfit. They gave us a temporary meter on a pole, and then moved the meter to the house when we were ready for it.

We saved quite a bit by making our own shower when we put in the bathroom, building it around a $7.25 shower assembly and a $1.50 drain. We made a form 36 in. square, knocked off one corner to fit the space, cut a hole in the bottom and threaded in the drain. The walls we built up from form to ceiling with ¼-in. plywood, well tarred around the bottom and heavily lathered with calking compound around the joints and moldings. We made the floor of mortar, giving it a 2-in. drop from walls to drain. We wanted a rough finish on the mortar to prevent slipping. Probably a skilled mason would have taken considerable time to get the right finish, but we seemed to accomplish it with no effort at all. The shower works beautifully and hasn't shown any sign of leaking, peeling or cracking.

During the plumbing process we installed the hot water heater, which is over the plumbing gutter midway between the bathroom and kitchen faucets. This is the most economical position, providing the shortest possible run for the hot water pipes so that heat dissipation is held at a minimum.

At this point we started getting into the wiring. The trend in wiring seems to be toward bigger and bigger wire to let the juice through easier. As one REA man told us, "You can't get a four-inch stream out of a one-inch hose. The bigger the wire, the better." We hooked up the range with 3-wire No. 6 entrance cable and a rubber-covered cord, and used the same wiring system for the hot water heater. The wiring

Compact and efficient, the MI Lodge is situated amid the scenic north Michigan woods.



13. Tongue and groove half-round cedar planking comprised the outside finish. Sills are of cedar.

14. The electric pump and most of the plumbing were concentrated in a pit directly below sink.

17. Plywood doors were hung with T-hinges. Brace across the door is stiffener, prevents warpage.

18. Bunk frames are 2x4's. Area under the lower bunk will be used for storage of hardware, etc.

system and range were grounded to the water intake pipe.

We utilized three of the four circuits provided in the fuse box in addition to separate circuits for the range and water heater. No. 1 circuit powers the front lighting system of fluorescents, No. 2 is a kitchen circuit for the pump, freezer, refrigerator and extra outlets, and No. 3 serves the rear wall, utility room and outside light. In the process we ran a wire from the spare circuit around to the closet on the far wall, figuring we might need it there sometime and it was better to put it in before the paneling went on. We installed plenty of outlets—seven double outlets in the main room and two in the utility room. In addition there are spare outlets on six of the lighting fixtures and on the range.

Through local circumstances the hot water heater is giving us a break on our electricity bills. Cloverland Electric offers no rate reduction for an electric range but they do for an electric hot water heater of

15. Kitchen cupboard was made of scrap lumber. Braces were attached directly to the studding.

16. Stall shower utilized ¼-in. marine plywood. All joints were securely nailed and well calked.

19. Built-in bookcase occupies one end of bunk area. Jarvis is boring holes for clothes pegs.

20. Heat lamps were used to get a floor temperature of 75 degrees preparatory to laying tile.

more than 30 gallons capacity. The rate drops to one cent per kilowatt hour for the 300 hours after the first 200. And the company doesn't call for a time clock on the hot water heater. Your local utility company probably has a similar scale applied to power used for hot water heaters.

Although apparently not plagued with overloads at peak hours, our power company does have another cross to bear. This is the propensity of frustrated hunters to test their marksmanship on line insulators. When this happens an entire area is plunged into darkness, which the company calls an "outage." On these occasions everything stops in the MECHANIX ILLUSTRATED Hunting Lodge. The water pump is electric, the stove is electric, the coffeepot is electric, the blanket is electric—so at times we have to carry water in a bucket, cook in the fireplace, and dig spare blankets out of mothballs.

Each fall, in its monthly bulletin, the company begs piteously that hunters please

21. Starting from the center of the floor, Jane follows floor plan drawn up by the tile company.

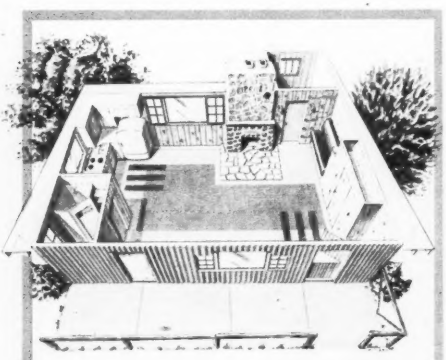
22. At last—the lodge is finished. Notice how the small but complete kitchen was squeezed in.

refrain from shooting off the insulators. Each spring the bulletin notes with relief that the number of "outages" has dropped considerably as the fishing rod replaces the gun.

Major economies can be effected in exterior finish, insulation and interior finish if conditions are right. Costs for the model hunting lodge are based on 2-in. log siding as an exterior finish at 22½ cents a square foot, ½-in. rigid insulation at 7 cents a square foot, and western cedar paneling for interior finish at 19½ cents a square foot. Want to cut that down some? Then consider these alternatives: eliminate the insulation if you don't plan to live in the place during extreme cold weather. Nail exterior finish and interior finish directly to the studding. Use shiplap for the outside finish, at 10 cents a foot, and the lowest price ¼-in. plywood for the interior at 5 to 7 cents a foot. Or use these finishes with the insulation. Or try shiplap as an interior finish. Make up your own combination.

The outside of the lodge takes 1,000

Here it is: the finished lodge, an attractive, utilitarian structure built for less than $2,500.



LARGE-SCALE PLANS

include the complete text, photos, plan and elevation drawings, and materials list, including cost. To obtain your copy, remit $5.00 to MI Plans Service, Fawcett Building, Greenwich, Conn. Please ask for Plan No. HJ-21.

23. Cedar paneling gives interior a rich appearance. Enclosed space over bathroom is a closet.

24. Lodge required only the addition of table, chairs, and drapes to make it completely livable.

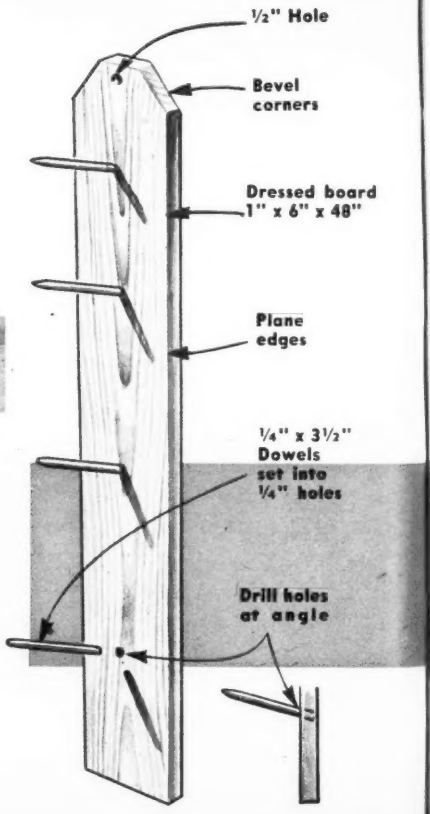
square feet of finish. The inside, counting cabinets, closet, bathroom and doors, requires 1,200 square feet. The 49 cents a square foot we paid for completed wall materials can be cut in half in a milder climate or for summer occupancy only.

With most of the other work done, you're now coming to the Pullman bunks that make the hunting lodge such a compact unit. The bunks require a fair supply of 2x4's, four 6-in. T-hinges, two 30x72-in. innerspring cot mattresses, about 16 ft. of covering material at least 48 in. wide, and 300 or so upholsterer's tacks. The covering material is about all that will show when you're finished, so it sets the decorative scheme. We chose Boltaflex, a plastic material manufactured by Bolta Products Sales, Inc., of Lawrence, Mass. It is flexible, easy to work, almost impervious to dirt and wear, and has a lustrous leather finish available in a [*Continued on page* 148]

Front view shows method of roof construction, with exposed rafters. To break monotony of the vertical siding, several horizontal courses were made at a height of 7½ ft. from the ground.

around the house

Right: Unique rack provides ample storage space for children's records. Before gluing dowels in place, slightly sharpen their exposed ends in a pencil sharpener. Below: Position your records on the board to determine spacing.



IT'S child's play to knock together this practical record rack which is suspended from the wall and solves forever the problem of record storage. Designed specifically for kids, you can make any changes required in spacing the pegs in order to fit the unit into your own den or playroom.

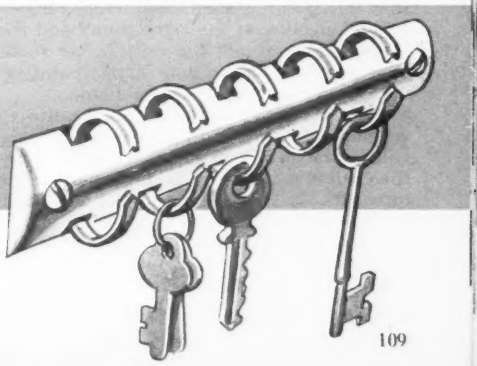
Select a 4-ft. length of 6-in. lumber and saw off the corners on one end. Lay records on the board in the positions you wish to hang them, and indicate where the respective spindle holes appear. Make sure that these are centered on the plank. Drill 1/4-in. holes to accommodate the 3 1/2-in. dowel pegs that will retain the records. Note pegs are inserted at an upward angle.—*Charles Smith* •

Bristle saver. Drive a small nail into the handle of your paint brush. This will enable you to hang the brush on the lip of your pail when painting, and also serves to keep the brush immersed in solvent, although it will not touch the bottom of the container.

To protect your fingers on small scouring or refinishing jobs in the kitchen or workshop, place your pad of steel wool in a spring-type paper clip. This method offers an easily manipulated handle and tends to increase the life span of your steel wool.

When painting, turpentine can easily be applied to a cloth or to your hands if you use a container with a spray attachment in the lid. Several window-cleaner bottles make ideal dispensers for this purpose, as they are flat and fit in your hip pocket.

Ring rack for keys may be made from a discarded loose leaf notebook. Remove the ring unit and fasten it to a convenient wall or cabinet, utilizing the original rivet holes. The rings are left open and keys are simply slipped over the lower elements as shown.



Prepare Before You Paint

Before brandishing the brush, there are many things you can do to simplify any interior paint job.

By Douglas C. Arnold

MANY people are doing their own interior decorating these days, for they have learned that it is not only economical, but a lot of fun as well. The modern paints and enamels now available are not at all difficult to apply. If used in accordance with the manufacturer's directions on surfaces that have been properly prepared, they will produce most satisfactory results.

But selection of the right colors and the right finishes is not the only factor to be considered. Before you start painting, certain preparations must be made.

After deciding on the general decorative scheme that you desire, and selecting the colors, the problem is mainly purchasing the correct materials for the purpose in the quantities that will be required, assembling all of the tools and equipment that will be needed, preparing the surfaces for painting, and then applying the material.

The best way to determine the amount of material that you will need is to measure the surfaces to be painted, and determine the number of square feet to be covered—with individual figures for each color that will be used. Of course, all wall surfaces are not solid, as they are generally broken up by doors and windows, but unless an opening exceeds 100 square feet in area, it is the usual practice to ignore it.

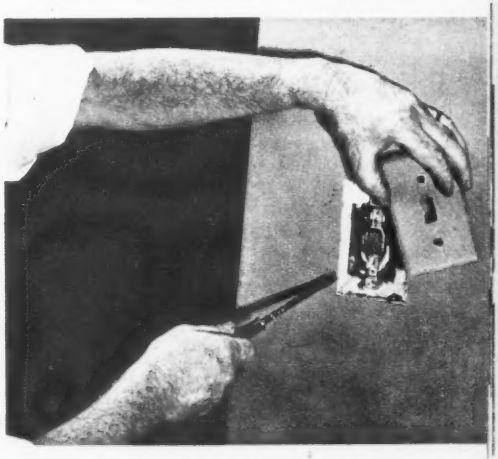
The condition of the surface to be painted must be given careful consideration. The number of coats required will depend greatly on the contrast between the present and the new colors, as well as the amount of patching and other repair work that may be necessary. Consult your local paint dealer and give him information concerning the areas to be painted and data on the condition of the surface. He can then determine the quantities of material that you will require.

For tools and supplies, you will need

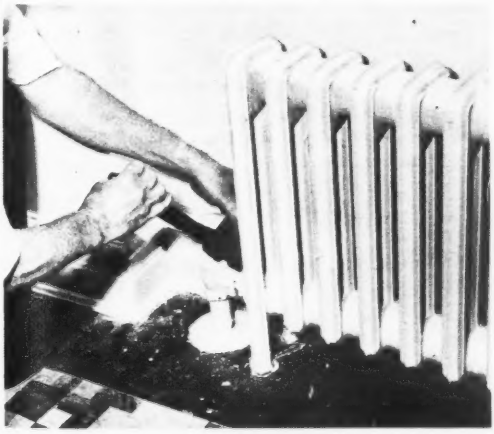
First of all, assemble all your necessary materials and tools in an easily accessible spot in the room.

Cover large furniture pieces with drop cloth or old sheets. Protect your floors with newspaper.

A minute spent in lowering the canopy of ceiling fixture will prevent it from getting spattered.



Don't spend time painting around switch plates. Instead, simply remove them all before you start.



The only way to paint behind a radiator is to remove it, but the result is worth the effort.

If you decide to remove wall moldings, be prepared for extensive patching job on new surface.

brushes or a paint roller (if you plan to use that method of application), sandpaper, a scraper or some other flat-edged tool with which to cut out cracks and for smoothing plaster, masking tape, paint thinner, a soft cloth for dusting off the surfaces, washing supplies, and tools such as a screwdriver and pliers for lowering or removing fixtures that may be on the surfaces to be painted.

If you use brushes, employ a 4-in. brush for the large areas, and a 2-in. brush for hard-to-get-at spots and corners. For reaching high areas, use a stepladder. It is foolish to have makeshift arrangements like chairs piled on tables. Too many people are injured yearly when such haphazard supports collapse.

After you have your tools and materials assembled—and these should all be gathered together in one easily accessible place—the room itself should be prepared. Remove pictures, shelves, brackets, and other fixtures that might be attached to the surfaces to be painted. Take these, along with small pieces of furniture and other objects that can easily be moved, out of the room before you start painting.

Large pieces of furniture can be grouped in the center of the room and covered with tarpaulins. Sheets and even newspapers may be used for this purpose, but it is important that no areas be left exposed that might be spattered with paint. Floors should be covered with sheets of wrapping paper or newspaper, especially near walls where paint may readily fall or drip.

It is also an excellent idea to lower light fixtures or their canopies before painting the ceiling. This will not only keep the fixture clean, but you can be sure of an even paint job right up to the edge of the canopy. Furthermore, if at any time in the future you decide to change the fixture and use one with a smaller base, there will be no discolored or unpainted section to be exposed around the base.

Many attempt to paint around switchplates, locks and doorknobs—but this is difficult to do without getting some of the paint on the hardware. It's much easier to merely remove these objects and replace them when the job is finished.

One usually neglected spot in homes is behind radiators. It is tough to get behind them with a brush and just about the only way to paint there is to remove the radiator completely, or swing it out of the way, if that can be done easily. If you do swing the radiator out of place, however, make sure all connections are tight after it has been replaced, as escaping steam or hot water can be dangerous.

It is a simple matter to do a clean job on window frames by masking the glass at the edge of the frame with either a masking tape or liquid, which can easily be taken off later. Another method is to cut a piece of newspaper the size of the pane of glass, soak it in water, and then press it to the glass. It will remain there until thoroughly dry, and by that time you will have finished painting the frame.

Be very careful of any foods that may be around when painting, as they have a tendency to pick up paint odors. Unless you use the new odorless oil-base paints, you should tightly seal containers of butter, cream pies or cakes, juices and other foods that might be affected by odors. Odorless paints are being manufactured in flat, gloss, semi-gloss, enamel, floor paint and varnish in a wide selection of colors.

Now you are ready for the actual preparation of the wall. If the room has wall moldings which you decide to remove in

1. Wall cracks should first be deepened and undercut so that new plaster will not fall out.

4. Before painting over wallpaper, determine if the pigments in paper will bleed through paint.

order to create a more modern appearance, this may be done, but it is not an easy job. The moldings themselves may be removed by prying off with a screwdriver or scraper, but pieces of plaster may come off with the molding, so that an extensive patching job is necessary. In addition, there may be no paint under the molding, whereas the walls themselves have had one or more coats, so that a lot of sandpapering will be required to make the walls appear smooth in the places from which the molding has been removed.

If the walls show cracks, damaged spots, or places from which the plaster has fallen away (including those from which moldings may have been removed), these should be repaired before any paint is applied. Using tools made for the purpose, a sharp-edged knife or a beer can opener, the cracks or holes should be enlarged as much as necessary to remove all loose plaster. With the point of the tool undercut the plaster so that the patching compound will be locked securely in place and will not fall out. Mix the plaster just before you are ready to use it, following the directions on the package. Thoroughly wet the spots to be patched, and with a trowel or scraper force the plaster into the openings. The patch should then be smoothed off with the edge of a scraper until it is even with the rest of the wall surface, allowed to dry thoroughly, then sandpapered smooth.

On any wall or plaster surface where a considerable amount of patching has been done, it will be necessary to touch up such repaired spots with a priming coat, or possibly to prime the entire wall surface before applying the finishing coat.

The procedure for the painting or enameling of wood trim is usually much simpler than that for plaster surfaces, for it is seldom necessary to consider cracks or damaged spots. Usually a light sandpapering of the [*Continued on page* 156]

2. Now apply fresh plaster to area. Smooth it down as much as possible with trowel or scraper.

3. When patch has hardened, use sandpaper to finish off the surface, then apply a priming coat.

5. If they do, or if wallpaper is too loose to paint on, wet the paper before attempting removal.

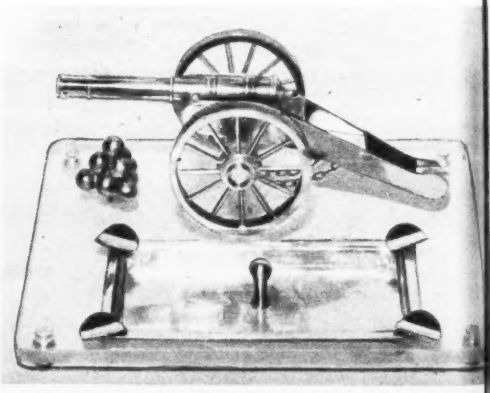
6. Once thoroughly soaked, wallpaper will come off easily under persuasion of a sharp scraper.

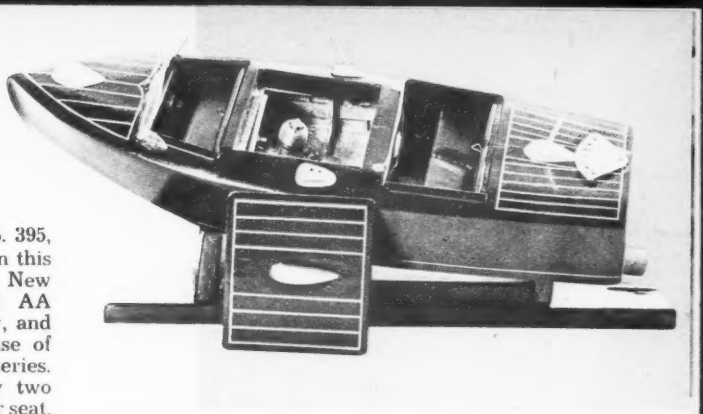
MI WORKBENCH AWARD WINNERS

Each craftsman whose project is shown here receives a $5 check and a Workbench Award Certificate. How about sending us a photo and description of your latest project? If you aren't a winner, you may still receive a Certificate Of Merit. Photographs of your workshop are also eligible for an award. Send entries to MECHANIX ILLUSTRATED Workbench Awards, 67 West 44th Street, New York 36, New York.

All-steel planer designed and built by T. Fandrich, Vernon, Canada, will accept up to 4x12-in. planks and can smooth about 2,000 board feet per hour. Machine can surface all four sides; total footage is tallied by a converted automobile speedometer

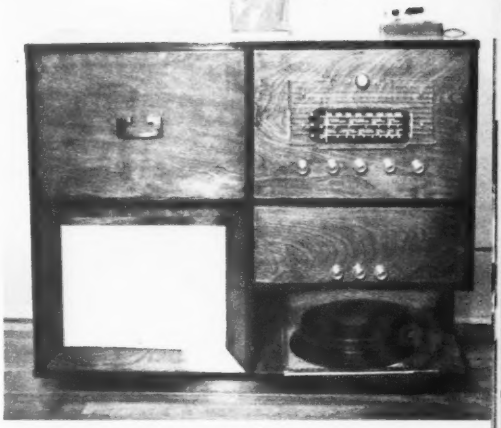
Metalworking projects by John F. McElwee of Altoona, Pa., include a model cannon, complete with ammunition, and an ash tray, foreground. All the objects are of brass and are mounted on a Plexiglas tray. Ash tray is attached with a finial.





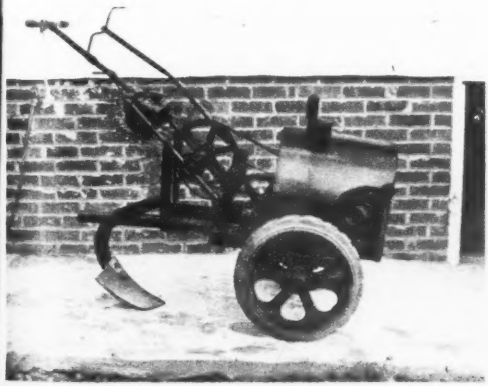
Altered Elf, MI Plan No. 395, now runs on gas power, in this version by Cecil Phaire, New York City. An Atwood AA Wasp supplies the energy, and speed is increased because of the removal of the batteries. Headlight is powered by two penlight cells placed under seat.

Jimmy McCrary, six, looks like he's boning up for the famed auto races held in his home town, Indianapolis, Ind. His dad James, a toolmaker, built this miniature runabout which is powered by a Briggs and Stratton 1½-hp engine mounted in rear.

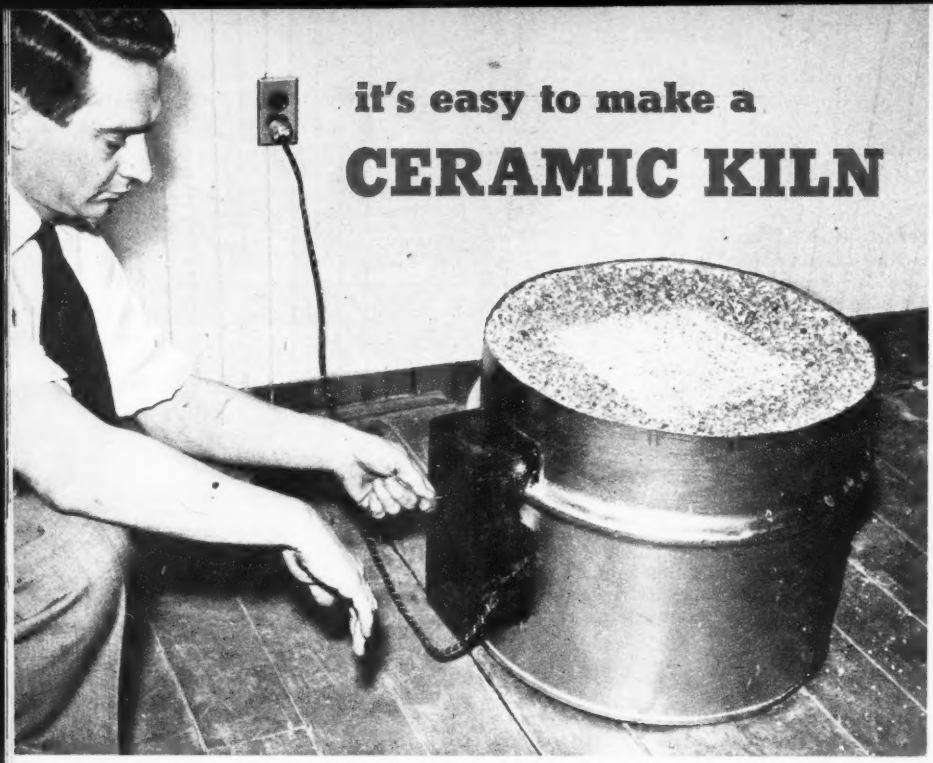


Handsome console made of birch plywood is a first attempt at cabinetmaking by Dave Mallin, Rowyn, Canada. Measuring 40x18x30 in., the cabinet provides space for a high-fidelity amplifier, automatic record player, 3-band radio tuner, 2 speakers.

Spare time plus spare auto parts equals garden tractor for Marshall Watson, Greenville, S. C. The engine is a 2-hp, 4-cycle job, and can accommodate a 6-in. turning plow with ease. The only power tool used in the entire construction was a ½-in. drill.



Moppet, MI Plan No. B-182, was successfully launched by Earl Swarner Jr., Carlisle, Pa., who also built a boat trailer from MI specifications. The trailer, Earl writes, accompanied him on a trip to Canada, and towed smoothly even at a speed of 60 mph



it's easy to make a CERAMIC KILN

The construction of this simple kiln is the first step toward the thrill of making and glazing your own pottery ware.

By Dick Hyman

A kiln is no different in performance than any other type of oven except that it reaches very high temperatures. This heat causes chemical changes to clay and glaze just as your kitchen oven causes changes to take place in baked food.

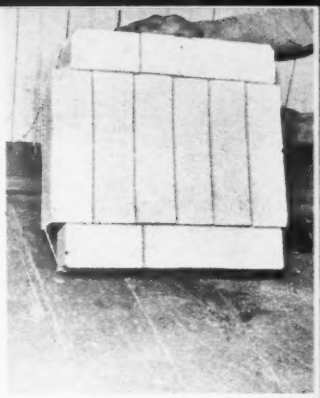
To make this kiln you'll need a suitable container. A 55 gallon oil drum cut down to the desired height makes an ideal container for a top loading kiln. In addition to the drum you'll need a carton of insulating brick (25 bricks, each 4½x2½x9 in.). These are carried by most oil burner supply companies or lumber yards. They are made in several types designed to withstand 2,000° or 2,300° or even 2,600° without deterioration. The 2,000° brick is entirely satisfactory. They are manufactured by Johns Manville, Babcock and Wilcox, Armstrong Cork Co., A. P. Green Co., and others. Cost about $7 per carton. Get about 125 ft. of nickel chromium wire, such as Nichrome V manufactured by Driver Harris, Harrison, N. J., Chromel A manufactured by the Hoskins Co. or, Kanthal A 1 manufactured by the Kanthal Corp. of Stamford, Conn. Cost of wire is about $7 per 100 ft. You'll also need a 25-pound tub of high temperature cement and a double-pole, double-throw toggle switch rated at 20 amps, 125 volts, plus small parts indicated in the drawings.

First step is to cut the drum down to about 18 in. high. Place nine bricks at the bottom of the drum as shown in the drawing. Ten bricks are used for the four sides and are grooved for the wire. The top is made of three and one-quarter bricks laid together as shown. After the bricks are set up, dismantle them and start the actual construction by thinning out the high temperature cement with water to the consistency of cream. Paint the bottom of the barrel and the bottom and sides of each brick with the cement. Place the bricks in position, exerting pressure to squeeze the

Photos by Robert Brightman

Bricks, making up sides of the kiln, are grooved half-inch deep to accept the heating wires.

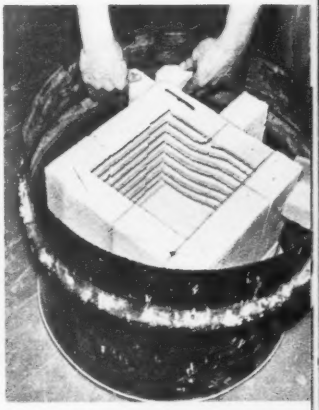
Aligning the grooved bricks for assembly. The grooves are cut out with a chisel and a hammer.



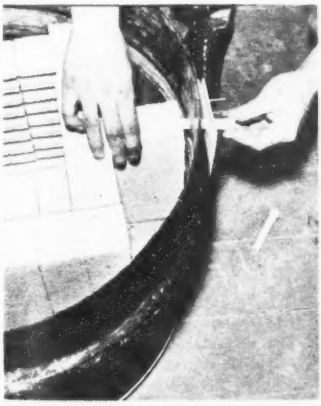
Floor of kiln is bound with wire so that it can be lifted and placed in the bottom of drum as a unit.

The floor of the kiln should be tightly wedged against the sides of the drum with scrap brick.

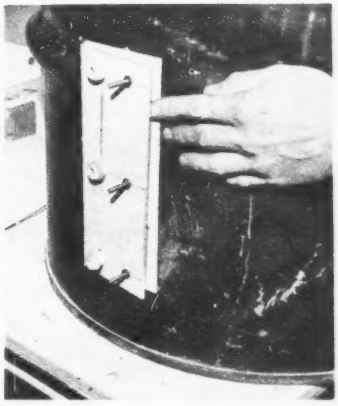
All touching surfaces of brick are coated with the high temperature cement applied with a stiff brush.



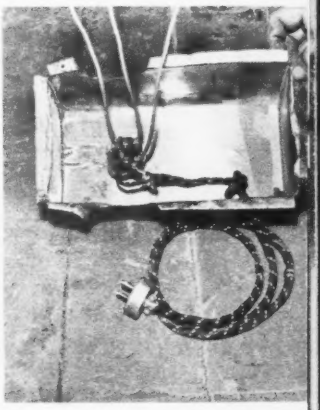
After side walls are cemented and erected in place, they too are wedged in place with scrap brick.



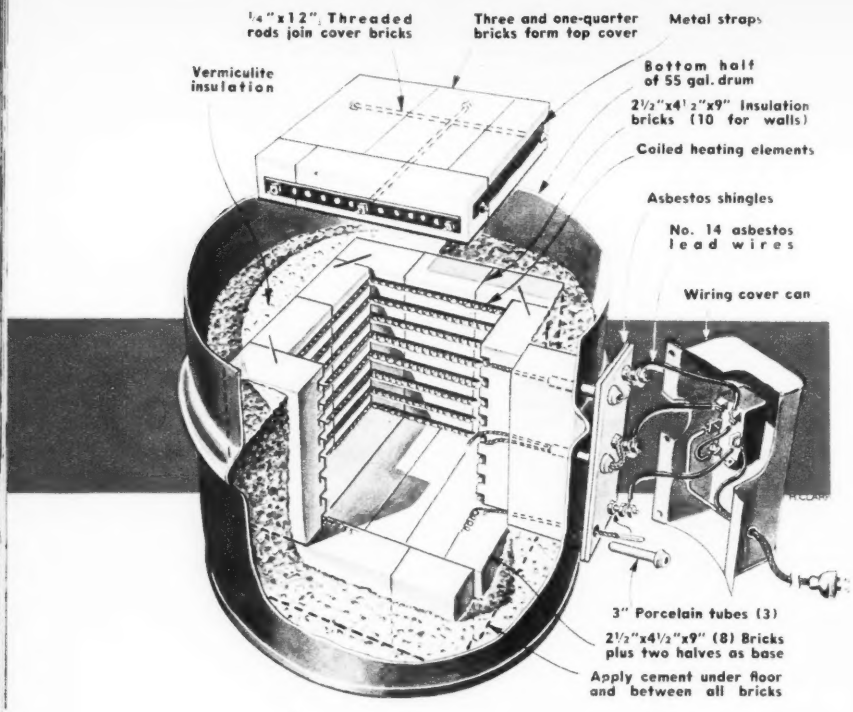
Porcelain tubes are inserted through asbestos shingles, through the drum and into pre-drilled brick.

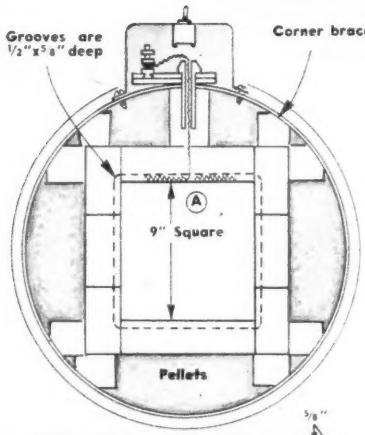


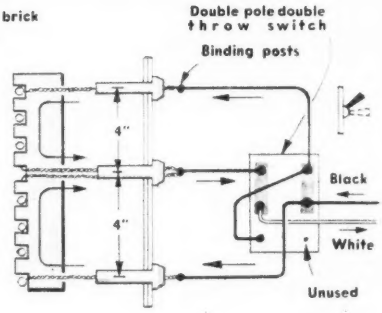
The two shingles are spaced so that binding posts for current do not touch the metal drum.



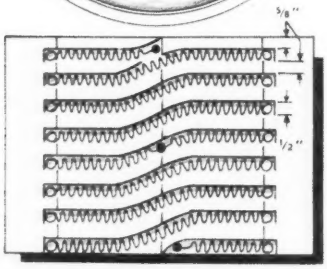
A two-gallon can, cut down the center, covers the electrical connections. Cord is No. 14 gauge.



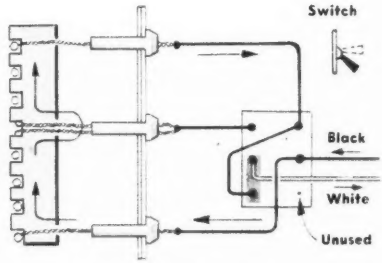




Parallel wiring for high heat operation



This is how entrance and exit wall 'A', is routed to permit each wire course to drop step lower each trip

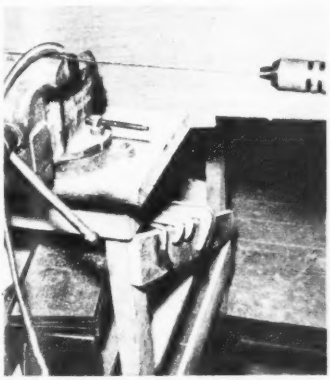


Series, wiring, for low (half) heat operation

bricks against the cement. Erect the sides, brushing a generous amount of cement on each touching surface. Then insert wedges between the bricks and the barrel to keep the bricks from slipping out of position. Wedges may be made of scraps of brick or even stones. Now take 50 ft. of the wire, double one foot at each end and wind it around a 3/8 in. dowel chucked into a carpenter's brace, see photo. Turn the brace so that the wire winds up into a tight coil. Wind until only two feet are left. Treat this end as the lead. Repeat with the remaining 50 ft. of wire. Embed the wire in the grooved rows of the brick and secure with staples made of 2 in. lengths of wires, bent into a U-shape and forced into place with a needle nose plier.

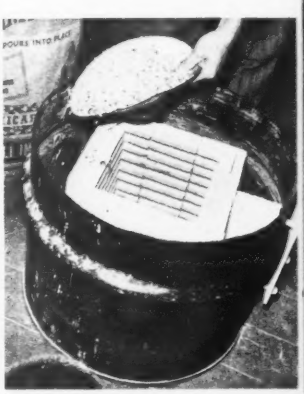
From an asbestos shingle cut two pieces for the electrical panel, 4x10 in. Drill three 1/2 in. holes for porcelain tubes through both pieces, through the drum and through the brick. A two-gallon oil can cut vertically through the center will become the switch holder and electrical service box. It is held in place by Parker screws. Mount the switch on the side as shown in photo. Make all connections through brass binding posts using asbestos-covered No. 14 wire. Be sure to install a 25 or 30 amp fuse in your fuse box, if there are other circuits on the same line, as the kiln draws 15 amps. Cover is made as indicated in drawing.

This just about completes the construction of the kiln. Of course the next thing to do is to fire something in it. But before firing any pottery we must make it and this will be taken up next month in an article describing the operation of a modern potter's wheel. •



Three strands of wire are twisted as shown to make a lead to the binding posts.

Wire, coiled by wrapping around a 3/8 in. dowel, is now inserted into chiseled grooves.



Next step is to pour Vermiculite, a mineral insulating material, into all open spaces.

Bricks forming the cover are cemented and held in place with five 12 in. threaded rods passing through the bricks and through four metal straps.

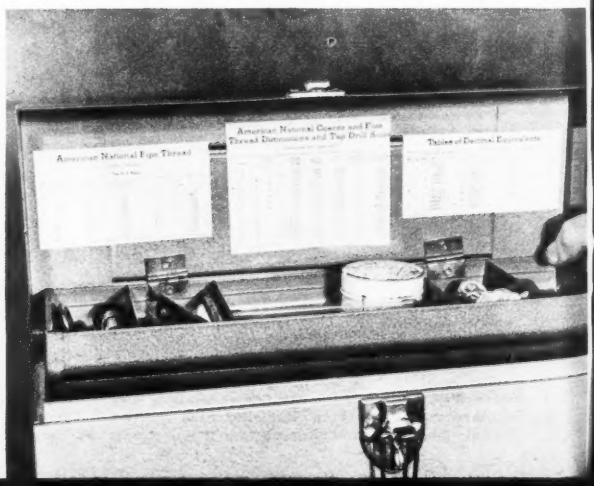
A piece such as shown, will take about five hours to be fired. Kiln draws about 15 amps. Use No. 14 asbestos-covered cord for connection.

Craftsman's Corner

Paper cups are perfect for holding batches of paint, pigments, finishes, etc., that are desired in small quantities for immediate and special uses. They permit only such amounts as are actually required, and are easily disposable.

Printed tables and other data needed for reference will always be handy if pasted in the cover of your tool box as depicted below. Protect them by coating with clear lacquer or by covering with sheet acetate secured by cellulose tape.

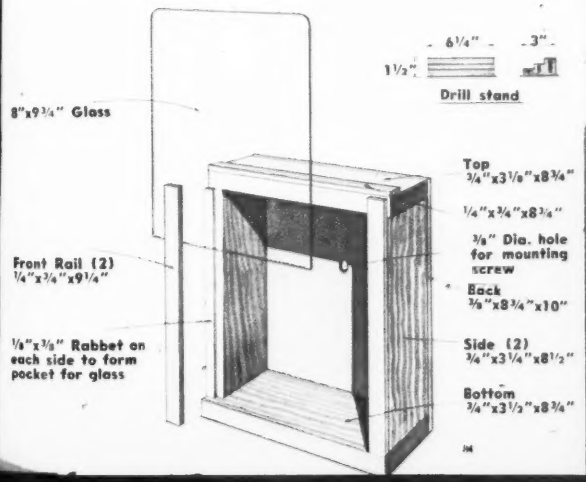
Soap or wax crammed into holes bored in the ends of screw driver and hammer handles makes excellent lubrication for treating nails and screws to be driven into particularly hard or tough lumber.

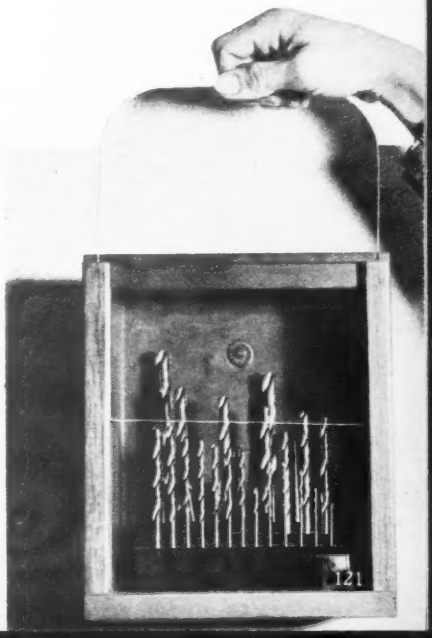


Reference marks on the center, the sleeve and the spindle of your lathe aid precision work by acting as guides to help you always to replace in same position the center (which should be specially ground to fit lathe) together with its sleeve.

Soap dispenser. Cut the bottom from a small-necked beer can and hang the can upside down near the shop's wash basin. Drop in a marble that's big enough so it will not fall through the neck and fill can with soap powder. To use, push up marble.

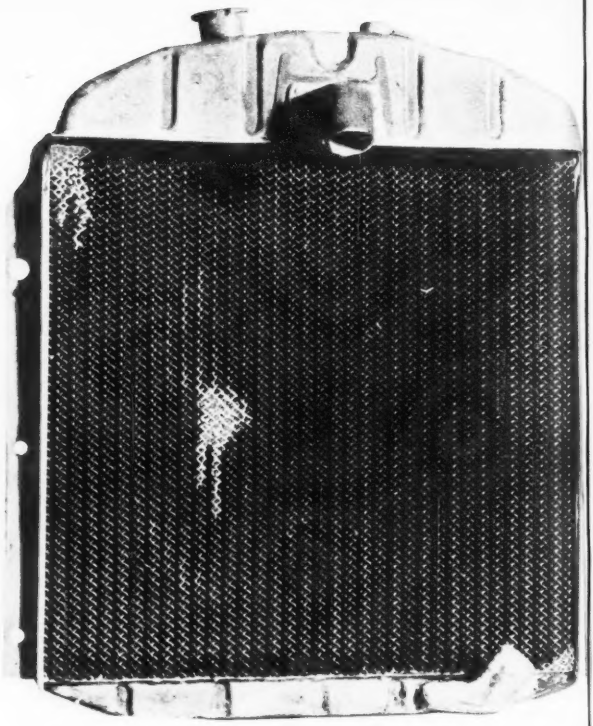
Cabinet for drills keeps them clean and free from rust, yet handy for instant use. Made from scrap wood and glass, it is mounted on the wall beside the drill press. The over-all dimensions shown can be varied if necessary to suit different sets.





CARE WILL SAVE YOUR CAR

car care



Radiator leakage is plainly indicated by whitish spot on core.

The Cooling System

A cast iron water pump impeller and shaft corroded by an inferior anti-freeze. Replacing such cast iron parts with bronze is a wise move.

Both of these hoses looked good on the outside. But, when cut open they revealed a different story. A blocked hose can cause over-heating.

By Frederick C. Russell

DON'T look now, but your thermometer has been dipping a bit lately—for once again cooler days are here again. It's anti-freeze time. Right now, in the calm of early frost, you can think the problem through and take the best route to freedom from trouble with the cooling system when winter comes and tries to conquer.

According to the American Automobile Association about 700,000 car owners were victims of radiator trouble. A high percentage of this could have been prevented by less shoulder-shrugging and yawning. American cars are drinking up around 45 billion gallons of gasoline a year, so it's a safe bet that some of this consumption represents waste due to neglect of the cooling system. Adding to the misery is the damage overheating or under-cooling can do to your engine.

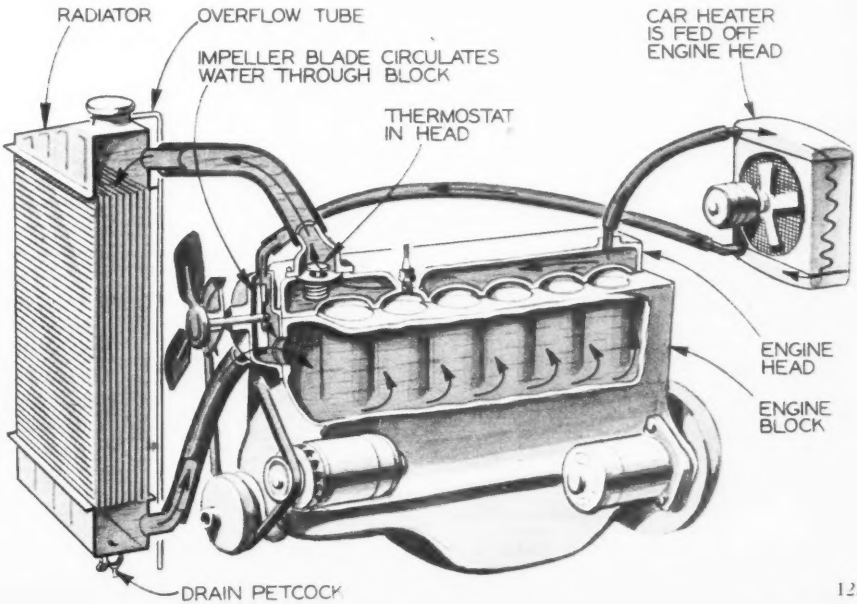
What throws us for a loop is the general belief that the cooling system is simple and foolproof. Motorists run across this all the time, from the greenhorn at the filling station who overfills the radiator to the mechanic who thinks heavy carbon deposits are due to oil pumping while overlooking the fact that the engine may have a faulty thermostat.

There's no use trying to make any progress toward cooling success unless you start with a clean slate. This means wiping out all the current misconceptions. Sure, ethylene glycol (permanent type) is a perfect hot weather coolant. It raises the boiling point, thus helping to prevent motor fever. But if used for this purpose it should be a fresh solution. Makers of ethylene glycol do not urge the use of their product for summer service because they feel it is not necessary. Cooling systems can be serviced to hold water temperature down to 180° or less in hot weather. No way has been found to avoid use of anti-freeze in winter other than nightly draining of water or a switch to full air-cooling.

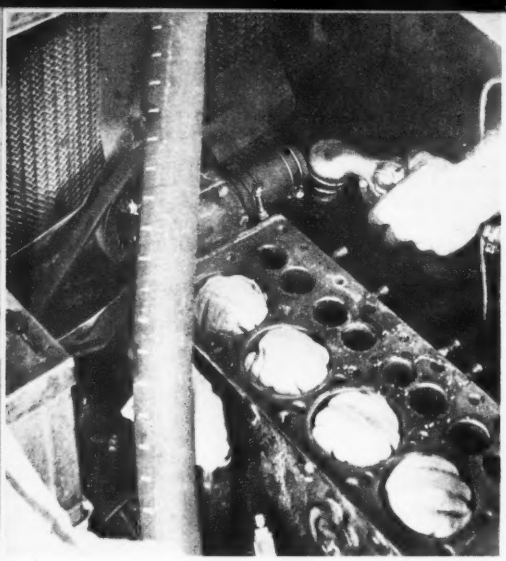
Many motorists have been trapped into believing that continued use of the original batch of anti-freeze, or its re-use, is all right if fresh rust inhibitor is added. They know that inhibitor becomes weakened with use, but are blind to the fact that anti-freeze—even plain water—becomes contaminated from slow but continuous leakage of combustion gases past the cylinder head gasket into the cooling system.

The National Bureau of Standards is very specific about this. In its circular No. 474 it says:

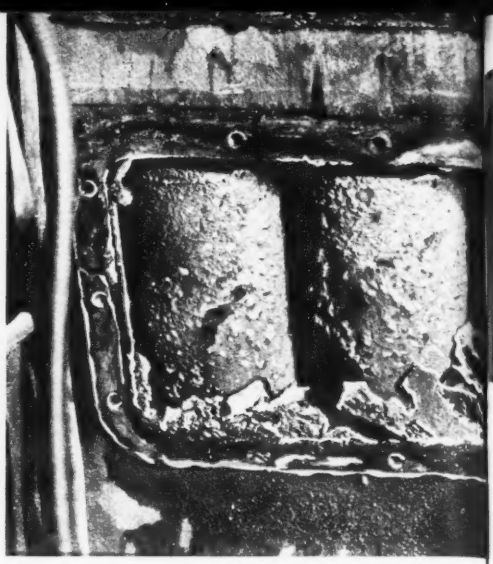
"During use, the anti-freeze solution can become contaminated by leakage of exhaust gases. The combustion products in exhaust gas, particularly the oxides of carbon and sulphur, will react with alkaline compounds present in the anti-freeze to form salts. As in the case of salt base anti-



Path of water in typical cooling system is shown in blue.



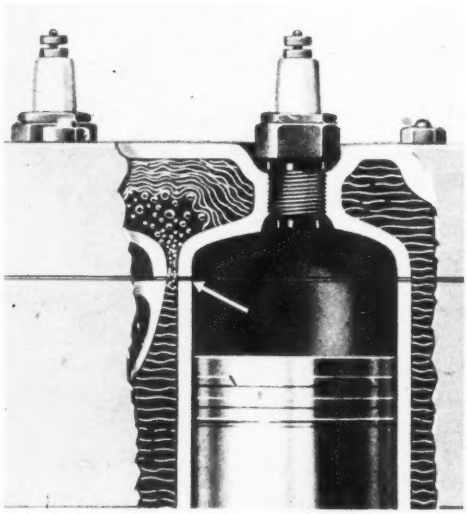
Logical time for manual cleaning of the engine block and reverse flushing of radiator is when the head is removed for a carbon and valve job.



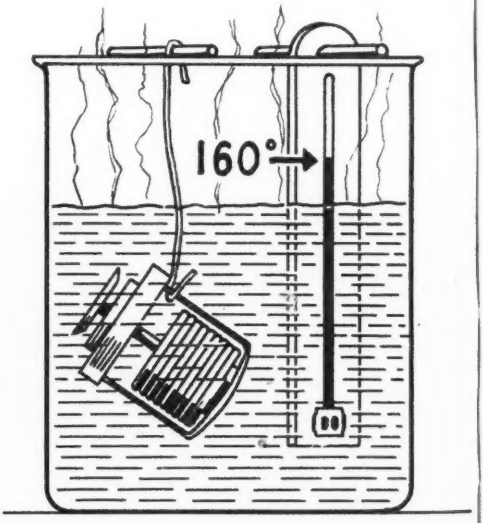
A soluble oil rust inhibitor, used religiously but carefully, will prevent this sort of harmful corrosion and sediment accumulation in water jackets.

freeze, even the addition of new inhibitor cannot prevent corrosion of these salts. Contaminated anti-freeze solution with depleted inhibitor can cause more corrosion and rust formation than uninhibited hard water if their use is continued indefinitely. To protect against corrosion, drain the anti-freeze solution after one winter's use or earlier *if it becomes rusty* in a cooling system that was reasonably clean when the fresh solution was installed."

I know owners who have used the same anti-freeze for several years, and apparently without damage. It's like the people who seem to be in perfect health even though they eat nails. There are always exceptions. The Bureau of Standards has a wise comment on [*Continued on page* 149]

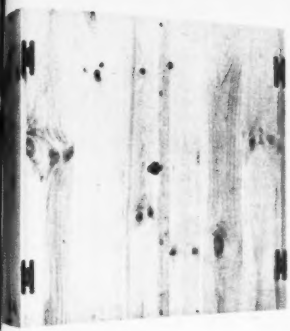


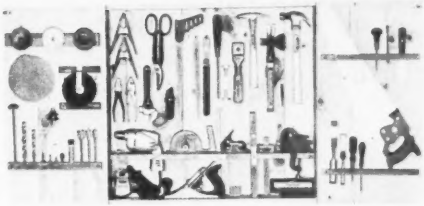
A break through a cylinder head gasket is a fruitful source of coolant loss. The gases tend to force the coolant out through the overflow pipe.



By dunking the motor thermostat alternately in hot water (of its rated capacity) and then into cold water, you'll see if it is working properly.

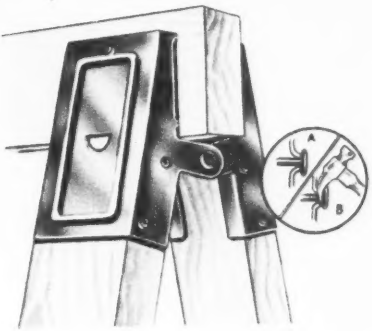
NEW for the SHOP



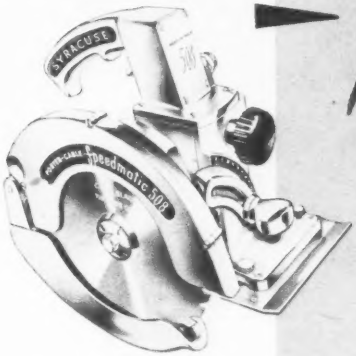


De luxe tool kit comes in a knotty-pine chest, contains 29 hand tools, and features an electric drill with 16 accessories. $97.50. The kit is available at Patterson Bros., New York 7.

Magnetic pick-up tool is flexible for retrieving small tools and fastenings dropped in inaccessible spots; 18 in. long; price: $1.75. Made by Bingham-Herbrand Corp., Fremont, Ohio.



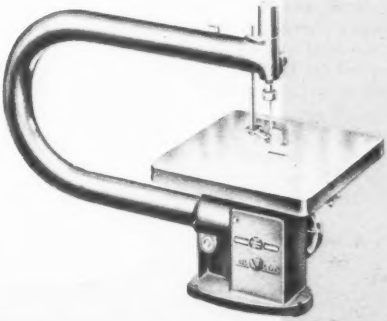
Sawhorse bracket has flanged nail holes (see inset) allowing quick disassembly of horse with claw hammer. Bracket takes two-by-fours. $2 per pair. Dalton Mfg. Co., St. Louis 5.



No kickbacks are possible with Porter-Cable's new Speedmatic saws, for they are equipped with friction clutches. When blade binds, clutch lets motor turn while blade stops.

Industrial-type workbench has warp-proof top, steel framework, and adjustable feet. Sizes: 28x60 in. and 23x46½ in. $26.80 and up. Sturdi-Bilt Steel Prod., Inc., Chicago 5.

For saber-cutting large panels, overarm on this 18-in. Atlas jig saw swings out of the way. Chucks hold blades up to $\frac{5}{16}$ in. wide and accessories up to ¼-in. dia. shank. $39.



THE MODEL MAKER'S ROUNDHOUSE

The author's display rack showing four levels of track. Gap in top has been left open for a bridge.

TRAIN DISPLAY SHED

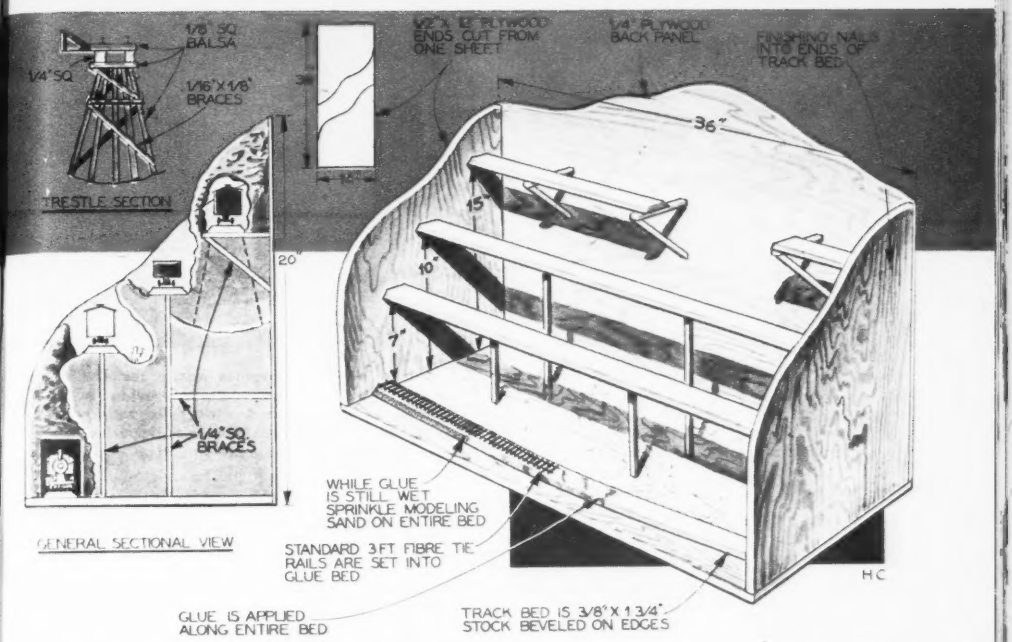
I'VE been interested in model railroading for quite a few years now but have never had the room to do much about it. Friends of mine who operate their own pikes often invite me over and I come a-runnin' with my loco and cars. I have no pike. What to do with my stock when they were not in use presented a problem —and an idea. Why not build a small section of three or four tracks complete with scenery and trestles?

I bought three pieces of half-inch plywood one foot wide and three feet long. I cut one in two, for the sides, and sawed out a mountain profile on each side. The back is made of quarter-inch plywood. Next was the mounting of the roadbed. You can make your own of white pine or buy Tru-Scale at the local hobby shop. For the track I used Atlas HO gauge in three-foot strips.

Next a sack of ballast from my hobby shop and I went to work. I found the best method in laying ballast was to do a small section of track at a time, about a foot or so. I brushed the glue, any slow drying type will do, on the roadbed then laid the track strip down on this and spiked the rails. Then I sprinkled the ballast with a large spoon. This work is done over a newspaper to catch the excess ballast. The ballast is then smoothed out and the process repeated until you have completed the roadbed. A good idea is to paint the roadbed gray before installing the ballast. Then if any of the roadbed shows through the ballast it will not be too noticeable.

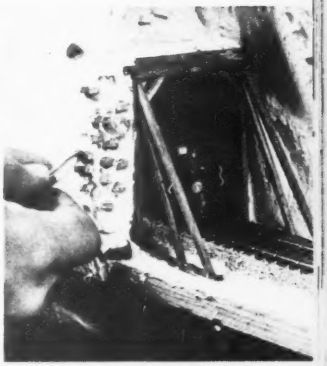
The completed track and roadbed is now mounted in the display box. Three track sections are required, each three feet long. The first track is mounted 7 in. above the floor of the base, the second about 10 in. and the third 15 in. high.

Now we come to [*Continued on page* 156]



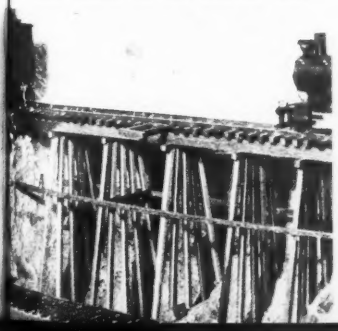
Newspapers, soaked in starch solution, are applied over framework made of cardboard strips.

Next step after newspaper has dried, is to apply the scenic model plaster with a paint brush.

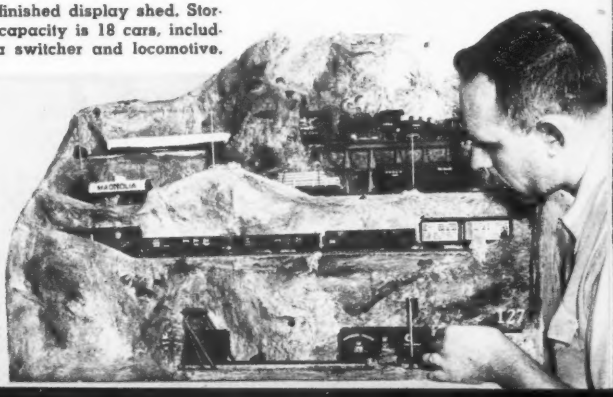


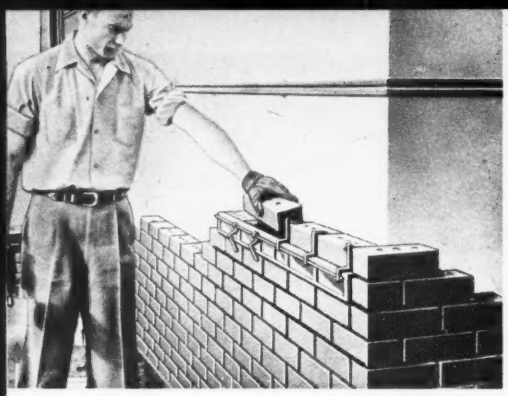
Tiny bits of wood glued to the dried plaster wall of the tunnel look like natural rock formations.

Bridge is made of square balsa strips. Atlas track was stripped and relaid on the heavier ties.



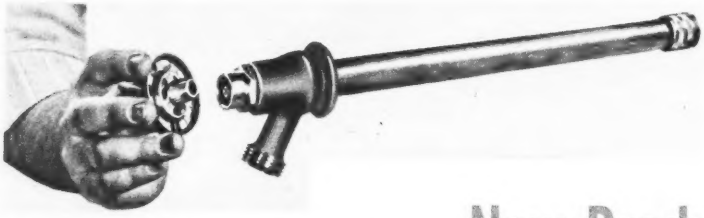
The finished display shed. Storage capacity is 18 cars, including a switcher and locomotive.





Masonry guide insures accurate laying of bricks or blocks of any size, helps you get uniform amount of mortar on every course. Attachable corner guide available for achieving perfect corners. Bartram's Masonry Joint Guide Co., Eugene, Ore.

Inflatable plastic cornice is easily installed by slipping it over a curtain rod with provided hooks. Cornice is reversible and comes in a wide range of colors and patterns. Matching draperies may be obtained. Home Curtain Corp., New York City.

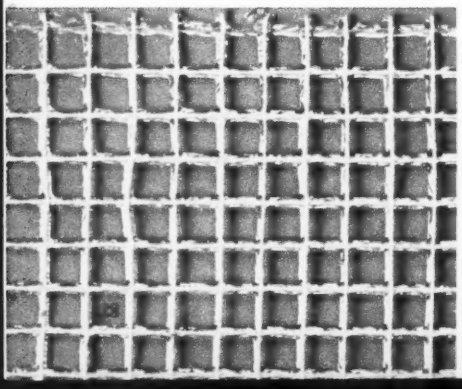


Non-freezing outside wall faucet is now made in either galvanized or brass and copper models. Faucet provides outside running water all year round, despite freezing weather, is operated by the handle turning off a valve inside the building. It is not necessary to turn water off inside house before winter sets in. Recent improvement features "loose key" handle, whereby handle may be detached and used as a key for further safety. James Knights Co., Sandwich, Ill.

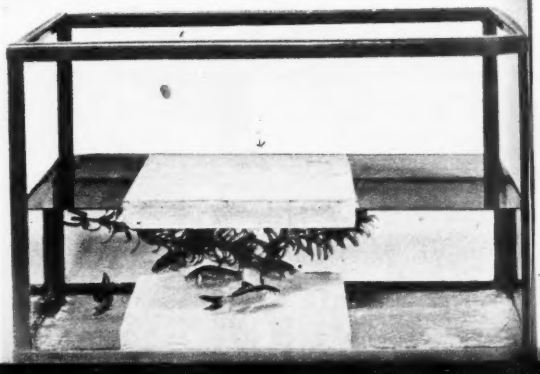
New Products for your house

★ For more details about products on this page, write: Dept. K MECHANIX ILLUSTRATED, 67 West 44 St., New York 36, N. Y.

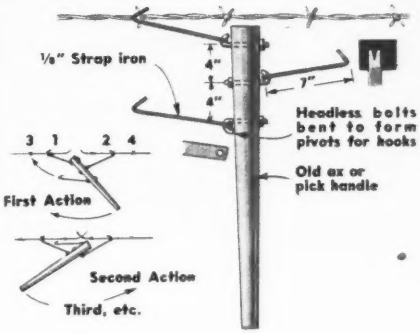
Plastic storm window material is easy to work with, available in diverse mesh sizes and coverings. Below is full-size sample of Scrim-Glass, made by fusing two sheets of acetate over a white cord base. Manufactured by Warp Bros., Chicago.



Insulating agent added to lightweight concrete or plaster renders mix so waterproof that hardened slab floats on water. Both slabs are of identical mixes, but agent was added to mix of floating slab. American Fluresit Co., Cincinnati.

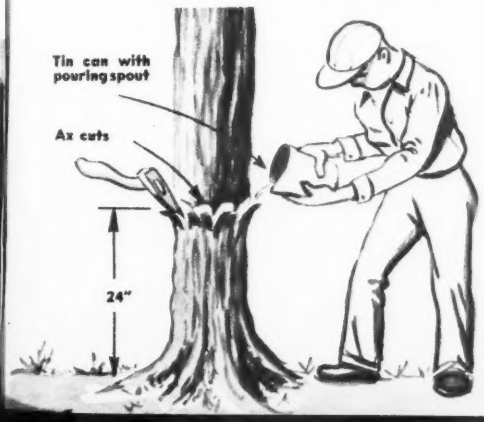


One-man fence stretcher will pull any length of wire to the desired tension and will sustain tension while a splice is being made. Use a pick or ax handle for the shaft and attach strap iron as shown below.

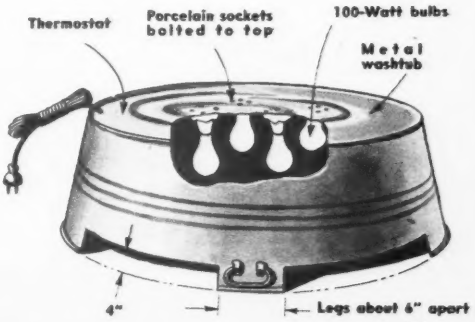


FARM KINKS

Tree poison can be made with $\frac{1}{16}$ oz. arsenic, 2 oz. lye, and 2 quarts of water. Mix arsenic with a little water, then slowly add lye to water, which will get warm. Add arsenic paste. To apply, cut a series of gashes around trunk about 2 ft. from ground; pour solution. Sap will carry poison throughout tree during spring or fall.



Economy brooder is made from a galvanized tub. First of all, cut out staggered segments 4 in. deep from the rim as indicated. Attach several bulb sockets and an automatic regulator. To protect chicks from glaring light, cover your 100-watt bulbs with blue or red paint. This unit will accommodate at least 100 chicks comfortably.



Save That Chair

By Harold Epstein

Bridge chair of type shown can be renovated by recovering the seat pad and adding coat of paint to the frame.

First step is to invert the chair and remove the screws that hold the seat in place.

Don't remove old material—it acts as an extra cushion. Tack on new plastic covering.

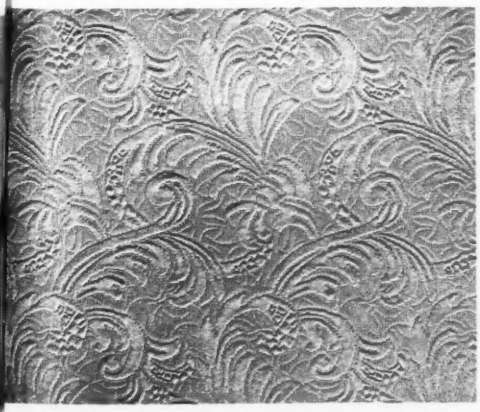
Here's how bottom of seat pad should look after tacking. The top corners are mitered.

Revive your sagging sofas and cheerless chairs by following these simple hints.

WITH today's rising costs it pays to take a second look at any furniture you are planning to discard. Chairs especially can be given a new lease on life with a little know-how and simple equipment.

Let's take the ordinary bridge chair or kitchen chair first. Many of them have pads which in time become soiled and torn. Turn the chair upside down and unscrew the pad from the frame. Don't remove the old covering as it will help keep the new covering smooth and tight. Follow the pictures and you will see how easy it is to make silk purse out of the proverbial sow's ear. For covering you can use leather, leatherette, or the new plastic materials that wear just as well as leather and come in a far greater variety of colors and textures. [*Turn page*]

Closeup of Resproid, plastic upholstery material that comes in many colors, two gauges.



Before reattaching seat, apply paint to frame or strip down and renew old finish.

Of course when the seat looks brand new, the frame of the chair suffers by comparison. What to do? Sand it down lightly and give it a coat of paint.

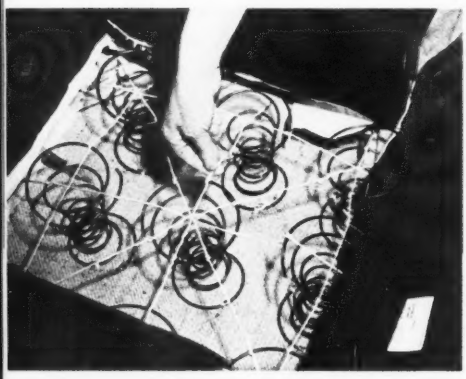
An upholstered chair requires a bit more effort to put it in condition. The first evidence of age is the sagging springs. Are they broken? Probably not. The springs tend to sag because the webbing on which they rest has loosened or else the cords which hold them in place have frayed and broken. Broken cords permit the springs to shift sideways, diminishing their load-carrying capacity. The remedy is to re-web and retie.

The first thing to do is to remove the dust cloth at the bottom of the chair. This exposes the webbing. The dust cloth is held in place with tacks. Pry them up so that the cloth can be removed without tearing. Then pry up the tacks which hold the webbing in place. Even though the webbing may not be torn, you will find that it has stretched considerably, thus giving less support to the springs. Remove the tacks from the webbing on two adjacent sides of the chair. This will allow you to inspect the cords which hold the springs in place.

Remove all the frayed and broken cords. You will notice that the cord is tied to the springs at every point where they cross.

After you have retied the new cord, the next step is replace the webbing. As a rule you can use the old webbing unless it is badly torn.

To stretch the webbing properly in place you can buy an upholsterer's stretching tool, or make one yourself. It merely consists of 5-in. piece of wood about 3 in. wide. One end has a rubber covering, while the other end has a half dozen nails in it. The webbing is placed over the nails and the rubber-tipped end goes against the framework of the chair. By bearing down, the webbing is stretched tightly. After the webbing has been replaced, put the dust cloth back. It's surprising what a difference in springiness these steps will make. •

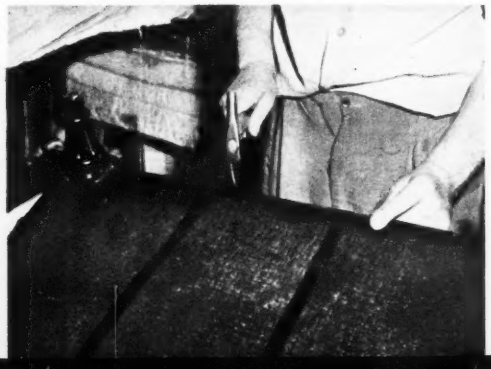


To check upholstered chair, first remove dust cloth and examine cords and springs. Replace frayed cords. Knot the new cord to every spring.

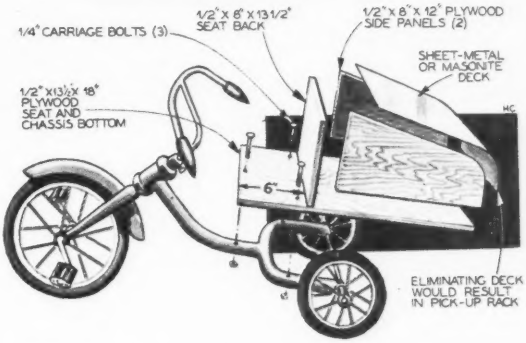
Webbing stretcher in use: rubber covering on lower end prevents slipping, row of nails along top engages webbing. Ample tautness is thus achieved.

Before tacking the webbing permanently, fold down the ends for additional strength and to prevent possible disintegration under pressure.

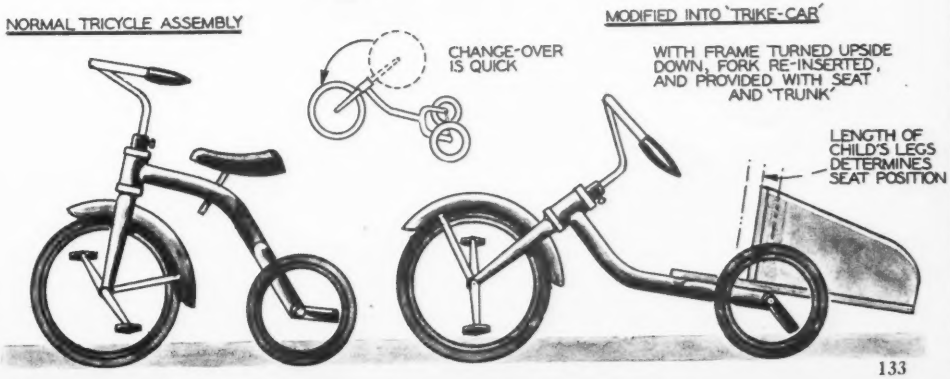
Finish the job by replacing the dust cloth. These simple steps will restore strength and springiness to just about any upholstered chair or sofa.



trailer trike



LENGTHEN the years your child can use his tricycle—and glamorize its appearance—by converting it to provide extra leg room. Remove and discard the seat. Remove handle bars and front-wheel fork and reverse and replace them so the handle bars are on the side of the frame originally occupied by the fork. Reverse the fender so it is over the top of the wheel. Make the combination seat and trunk from plywood as shown and secure to the frame with three bolts.—*George L. Wasson* •



CUSTOM-

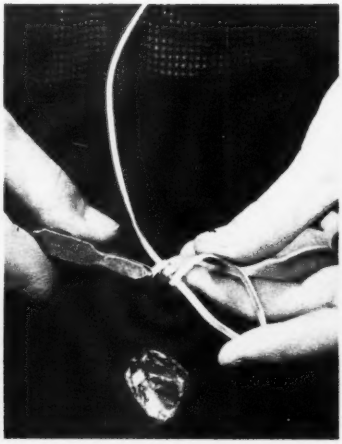
By Sam Kramer

EVERY few years a new jewelry fad starts in some craftsman's small workshop, and suddenly sweeps across the country. The latest idea involves semiprecious stones in their rough, glittering, unpolished state, just as nature designed them.

Such irregular chunks of aquamarine, topaz, amethyst, tourmaline, opal, and beryl are captured in nets and cages of silver or gold wire, and thus made into pendants, earrings, or fascinating charm bracelets.

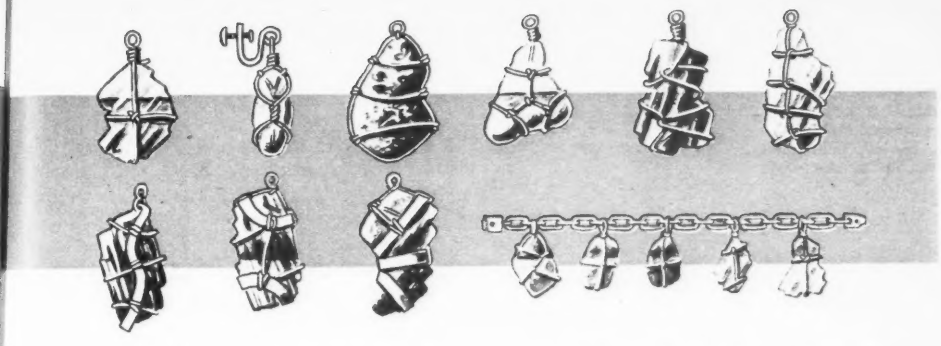
When you see them in the smart shops

Silver wire is loosely wound around outside of unpolished stone, in this case amethyst.



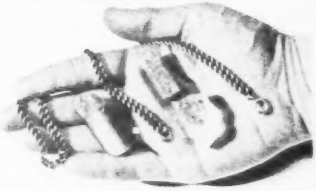
Two or three turns with pliers make frame rigid and result in decorative touch as well.

End of wire is brought around and twisted to make a loop for hanging finished pendant.



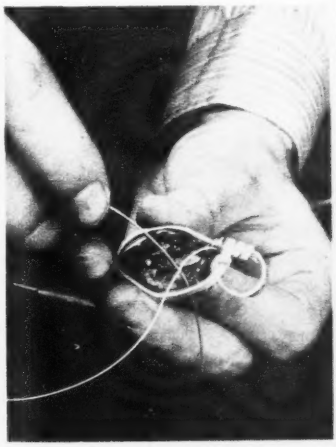
CRAFTED JEWELRY

Pliers, rough stones, wire and imagination are all you need to fabricate fashionable jewelry.

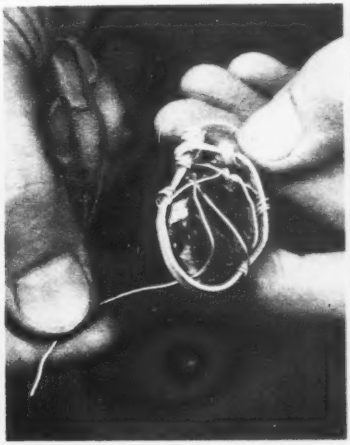


these pieces look remarkably attractive, unusual to a degree and very expensive. Yet the most surprising thing about them is that you can make them yourself with the greatest ease.

All you need are the ingredients: some pieces of rough semiprecious stone, some pliable metal wire, a length of chain, and a pair of pliers. No soldering, special equipment or special skills are required. Just to show how easy it can be, let's make one of these rare jeweler's pieces, say a pendant, with a natural unpolished amethyst woven in a framework [*Continued on page* 154]



Moor thin wire to frame with a few twists, then pass back and forth around your stone.

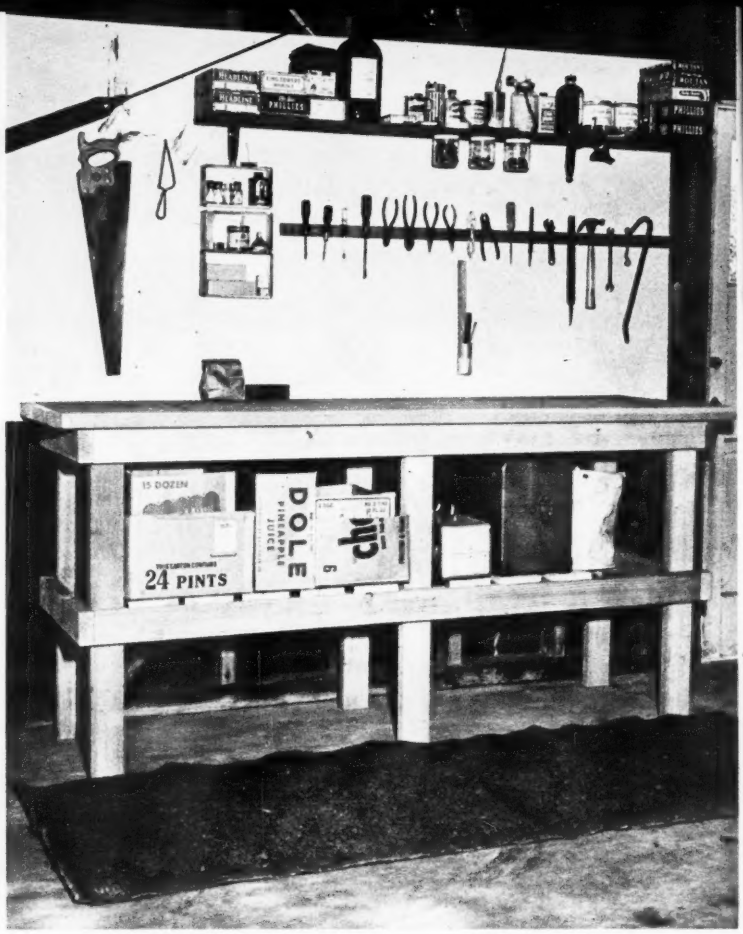


Secure stone by coiling light wire to frame. Take advantage of the stone's irregularities.

Completed pendant: a chunk of amethyst caged in silver wire. Chain can be bought by the foot.

Photos by Grayson Tewksbury

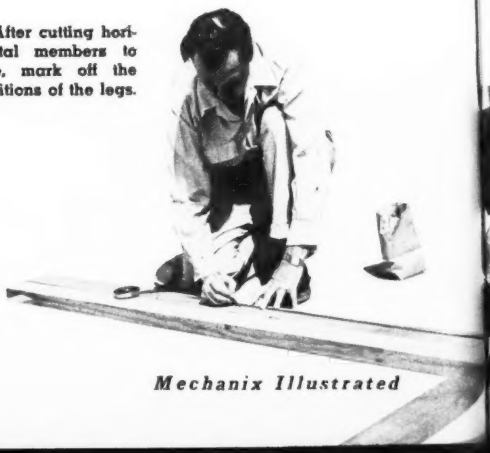
The tool rack is here attached to studding behind the bench. If your bench is to rest against a solid wall, you may attach rack to bench, then nail rack top to the wall.



hammer-and-saw

Build this basic shop fixture with a few common hand tools. Total cost: around ten bucks.

THERE is an old problem having to do with which came first, the chicken or the egg. The fellow with his own shop is faced with a similar riddle: the first thing he needs is a workbench, but he has no workbench on which to build it. The solution is given on these pages. With the most basic tools, you can construct a really sturdy unit.—*Shep Shepherd* •

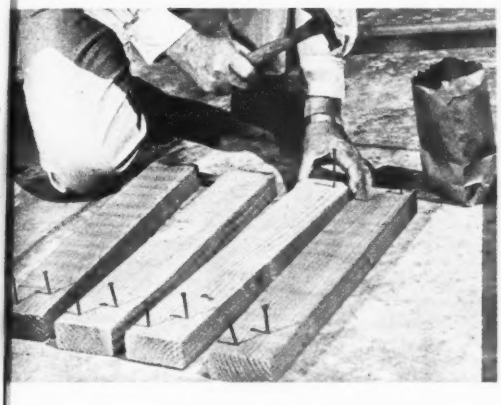


1. After cutting horizontal members to size, mark off the positions of the legs.

2. Use one nail to hold each leg in place on top brace until position is marked on lower brace. Attach leg to lower brace with 10-penny nails.

3. With the top and bottom elements attached, prepare the end horizontal pieces, which are four 24-in. lengths of 2x4, two on each side.

4. Do a little prefabricating at this point by driving nails into the ends of all four pieces. Note that nails are staggered to prevent splitting.



5. Invert one side unit and stand it on edge. Fit an end piece snugly in place. One hammer blow partially sinks nail, preventing further movement.

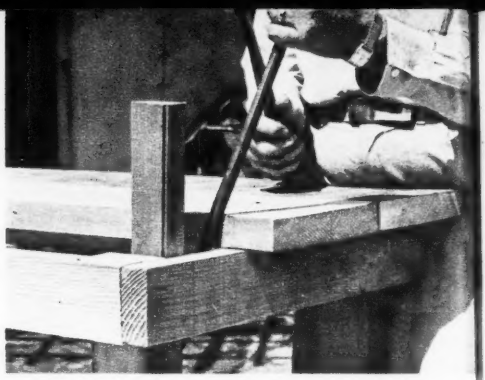
workbench

6. Attachment of the end braces completes frame construction. If desired, you can easily adapt the bench to accommodate a woodworker's vise.

7. Before attaching top, it's a good idea to install shelf members. Next determine exact total width of top boards; in this case they measured 28 in.

Turn Page

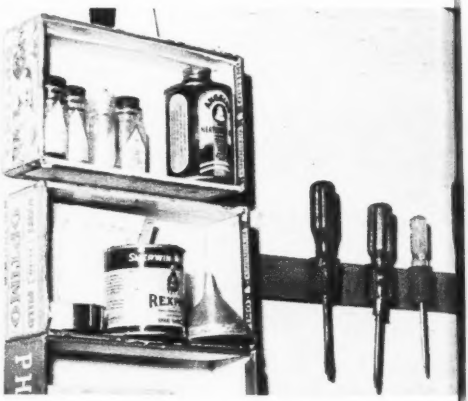
8. Overhang on front and back is 2 in. Cut top boards to have similar overhang on both ends.

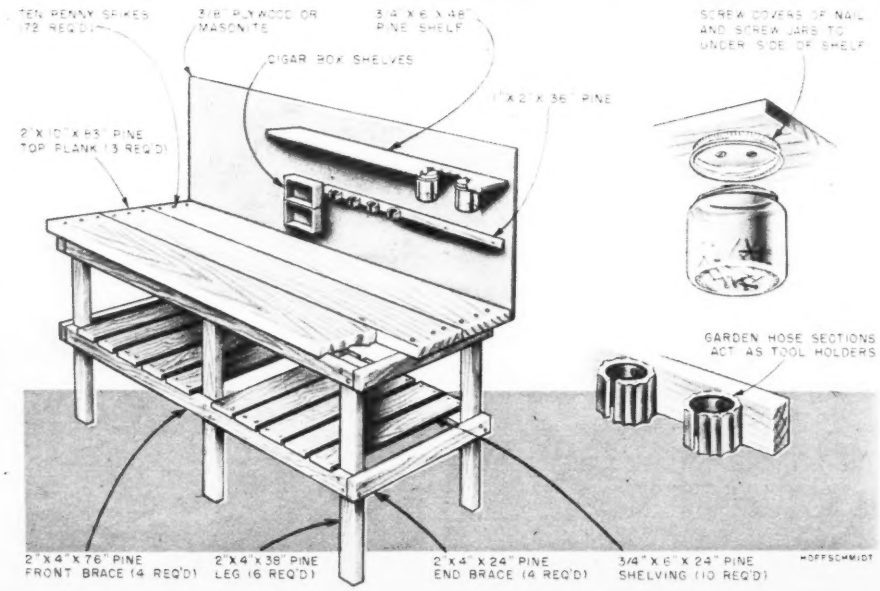


9. If boards have tendency to gap at the ends, use a crowbar to hold them firmly when nailing.

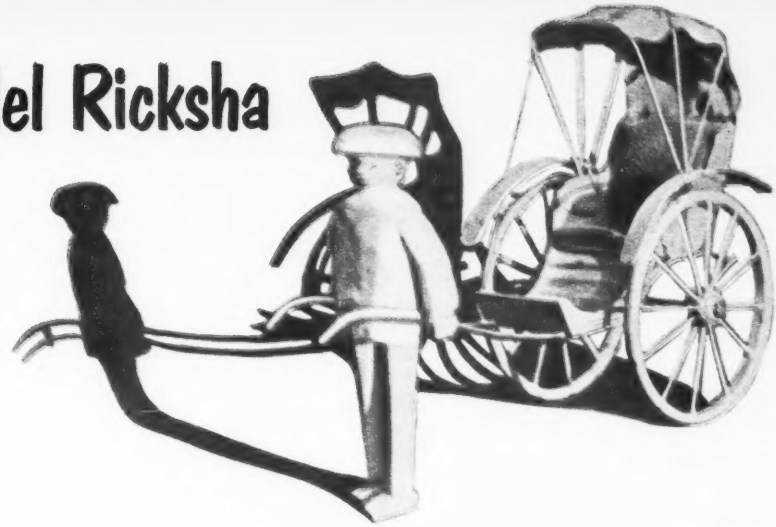
10. Screw jar lids to underside of rack shelf. This will keep jars handy, but out of your way.

11. Cigar boxes make ideal shelves for small parts or tools. Remove tops, screw to wall rack.



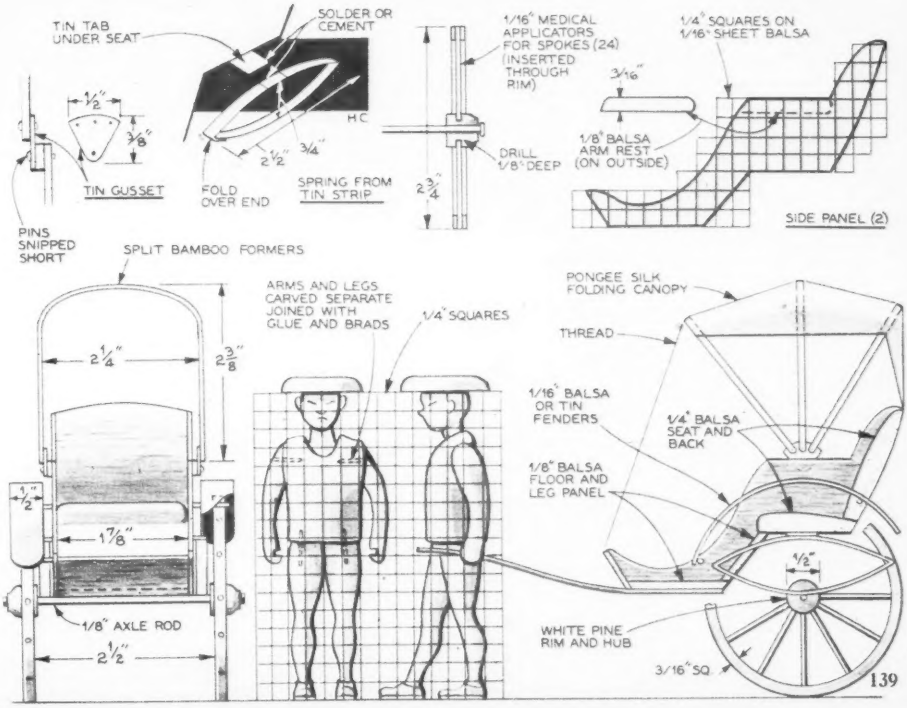


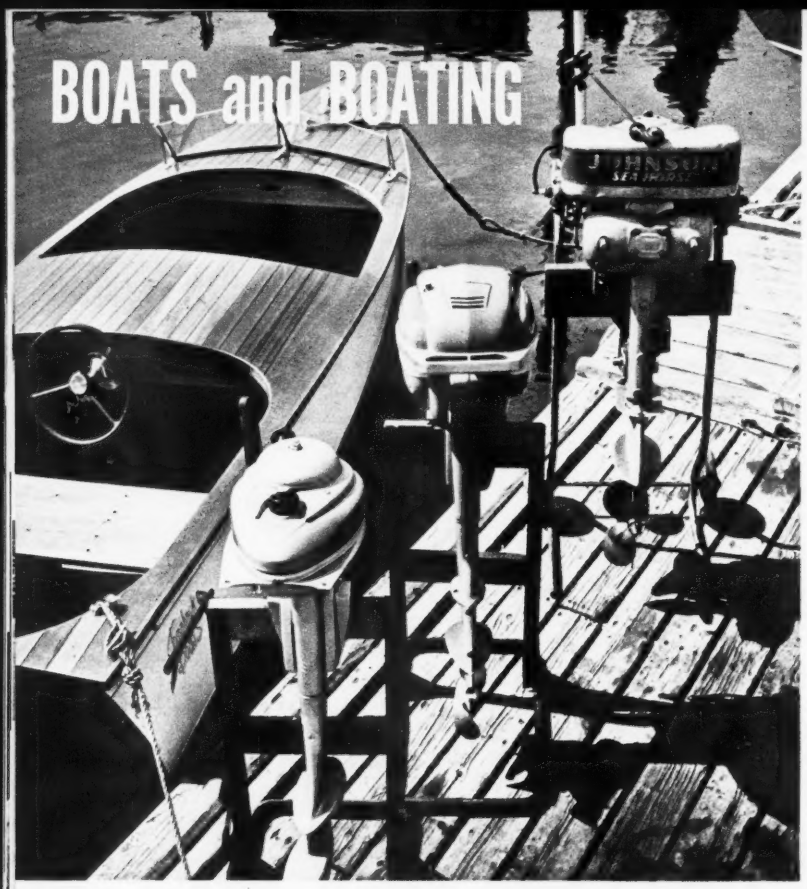
Model Ricksha



MAKE your own replica of the taxicab of the Orient from easily worked balsa and bamboo. Construction details are indicated in the sketches below. Bamboo top bows may be bent to shape over a hot electric bulb. If you want a top that can be folded back, pivot the lower ends of the bows on a tin gusset. If the top is to be stationary, bow ends may be cemented directly to the body sides. Any light cloth stained in coffee makes a realistic top.

Springs are fashioned from tin strips bent as shown. These are soldered or cemented to tabs extending under the body. Wheel rims of white pine are turned. Place spokes at 15° intervals. Whittle the runner from pine. Limbs are carved separately, then bradded.—*Hi Sibley* •





Evinrude Motors courtesy Oluf Mikkelsen Co., New York.

Photos taken at Island Canoe Club and Jack's Bait and Tackle Dock, City Island, N. Y.

Data checked by J. J. Burck of City Island.

Photographs by Walter Steinhard

OPERATING AN OUTBOARD

By Walter Steinhard and Arthur Crawford

THE outboard motor of today has come a long way from the cuss-provoking. knuckle-busting egg beater of a few years ago. Now it is a versatile little engineering jewel that starts with no trouble at all and is so simple to operate that anyone with a modicum of common sense can take over after but five minutes of instruction.

That small portion of common sense we just mentioned is important, however, because in the hands of dolts even the most foolproof piece of machinery can be as dangerous as a high-explosive projectile.

On the following three pages appears a series of pictures that emphasize the common-sense approach to outboard boating. The first thing to do, of course, is to choose a motor that bears some relation to the type and size of the craft you will operate. The motors shown above develop, reading from front to back, 2, 7, and 22 hp. The largest motor will make the runabout lying alongside really get up and go, and the 7-hp job will move it along nicely at about 16 mph, but the smallest motor will just barely push it. This doesn't mean that the 2-hp mill is no good, it merely means that you shouldn't send a baby to do a man's work. For rowboats, dinghies, and small sailboats, the baby would be ideal. When in doubt about matching up a boat and motor, consult your marine dealer—he's usually an expert. •

e Motors
esy Oluf
sen Co.,
w York.

taken at
d Canoe
d Jack's
l Tackle
ck, City
d, N. Y.

cked by
urck of
Island.

phs by
inhard

D

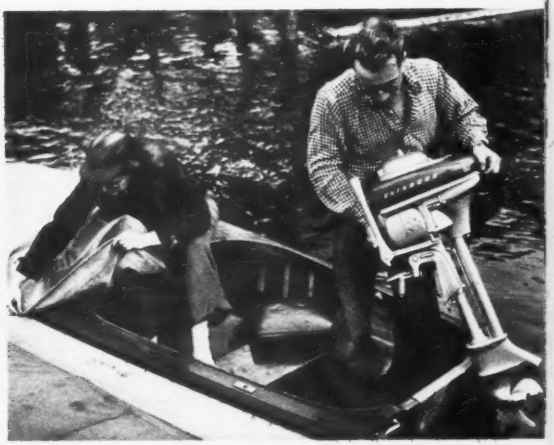
oose
type
The
rom
gest
ong-
job
nph,
ush
ll is
dn't
ow-
the
out
our
.

ed

Most popular use of motors is on compact planing runabouts. This 14-footer is driven by a 10-hp motor and seats four.

Many fishermen rent rowboats. These displacement-type craft travel along pleasantly with motors ranging from 2 to 5 hp.

Handy auxiliary power for a sailboat is furnished by an outboard motor that develops from two to ten horsepower.



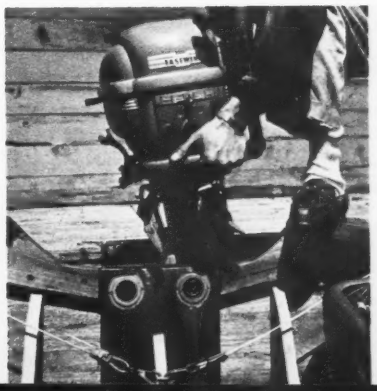
After unpacking a new motor, always check the lubricating grease or oil in the propeller-gear housing. Some may have leaked out in shipment.

There's more than one way to get a motor safely aboard. Be sure, though, to keep your weight in one spot—not divided between float and boat.

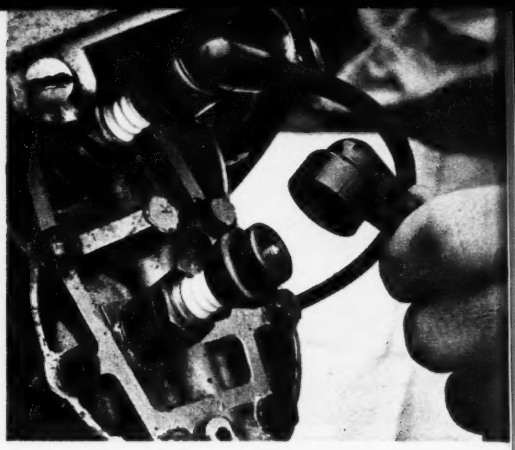
Adjust motor tilt with aid of someone on float. Make final adjustments while under way.

Socket safety plates prevent motor from riding up transom, thus forestall losing motor.

For utmost in convenience, add remote steerer, clutch, and throttle-lever controls.



Details may vary, but your basic motor controls, reading clockwise from lower left, are shut-off valve, air vent, throttle, and carburetor valve.

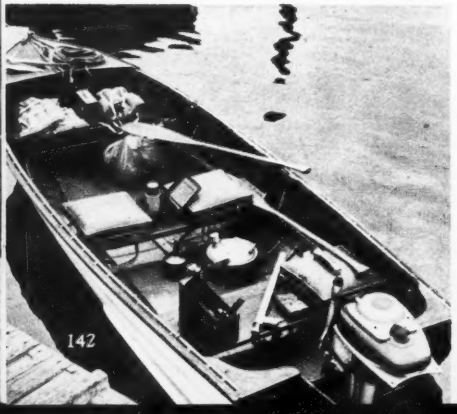


To keep the plugs sparking in rough, wet going, purchase plastic spark-plug covers at your local marine store. They will really keep plugs dry.

When mixing oil and gasoline, pour in oil first, then add gasoline, which comes out of hose with sufficient pressure to mix components thoroughly.

Many a stoppage is caused by dirt in the fuel, so be sure to use either a filter strainer or a wire-mesh strainer when adding fuel to the tank.

Equipment should include paddles or oars, a tool kit, safety cushions or life jackets, spare fuel with a strainer, a bilge pump, and a flashlight.



Show concern for your passengers' safety—you are responsible for them. Can they swim? Have you shown them how to use the safety equipment?

When getting under way, don't start the motor until you are clear of the float. Use paddle or oar for fending off. Start at slow speed.

This is the wrong way—never start motor unless pointing away from other craft. Excessive smoke shows too rich a mixture in tank or carburetor.

An improperly trimmed boat. Passengers' weight is too far aft and all on one side. Spread out so the boat rides on as even a keel as possible.

Cut your speed when passing anchored rowboats. A rowboat is easily capsized if caught broadside by the wake from a speeding outboard boat.

After using your motor, especially in salt water, flush it by running for a few minutes in barrel filled with fresh water, then wipe off exterior.

Never upend motor as shown in background—water from lower unit may reach power head and cause trouble. Correct carrying position is at left.

MONTHLY

PHOTO CONTEST

1st Prize ($10.00) .....Genie
Two seconds at f-9; taken by Stan Lee of N. Y. C.

$5.00 Award .....Mammy
A Graflex photo by Jack Howard of Los Angeles. Exposed at 1/200th and f-4.5.

Please put your name, address and picture-taking data on back of each print. Wrap with cardboard stiffeners and enclose a self-addressed stamped envelope or postage for return of unused photos. Prize-winning pictures are not returned. Judges are MI Editors. Duplicate prizes awarded in case of tie. Please address your entries to: Photo Contest, *Mechanix Illustrated*, 67 W. 44th St., N.Y.C. 36

$5.00 Award .....Day Dreams
One photographer captures another in a moment of repose; by David Silberman of Bayside, L. I.

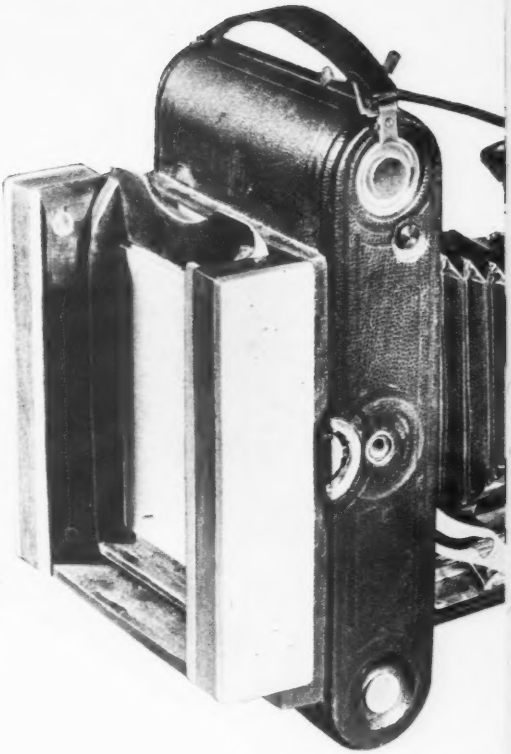
$5.00 Award .....Uncle Remus
A miniature Speed Graphic shot by Jim Bogin of Long Beach, N. Y. Exposed at 1/25th and f-5.6.

CUT FILM ADAPTER

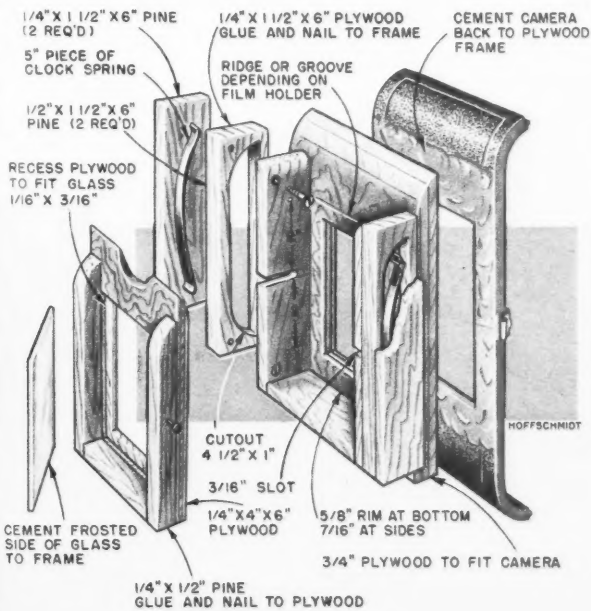
A handy device that will enable you to expose one film at a time in your roll film camera.

THE old post card size folding camera, now usually limited to one or two types of six-exposure roll film can become a versatile photographic instrument with the addition of a cut film adapter like the one illustrated. The same is true with another old time favorite, the No. 3 Kodak, taking 118 film. The most practical cut film size for the adaption is 3¼x4¼, although 2¼x3¼ may be used if the reduction in coverage is not objectionable. Mounting details, in either case, will depend on the individual camera, though construction of the unit will be as shown in the drawing. If the smaller film is to be used merely reduce the size of the parts proportionately.

Before starting to make the adapter, procure several cut film holders in size you are going to work with.—*George Daniels* •



Post card camera fitted with a 3¼x4¼ cut film adapter. Smaller size can also be fitted if desired.



For exact focusing, the frosted side of the glass (which faces the lens) should be 3/16 in. from the forward surface of the frame.

MONTHLY

PHOTO CONTEST

1st Prize ($10.00) .....Genie
Two seconds at f-9; taken by Stan Lee of N. Y. C.

$5.00 Award .....Mammy
A Graflex photo by Jack Howard of Los Angeles. Exposed at 1/200th and f-4.5.

Please put your name, address and picture-taking data on back of each print. Wrap with cardboard stiffeners and enclose a self-addressed stamped envelope or postage for return of unused photos. Prize-winning pictures are not returned. Judges are MI Editors. Duplicate prizes awarded in case of tie. Please address your entries to: Photo Contest, *Mechanix Illustrated*, 67 W. 44th St., N.Y.C. 36

$5.00 Award .....Day Dreams
One photographer captures another in a moment of repose; by David Silberman of Bayside, L. I.

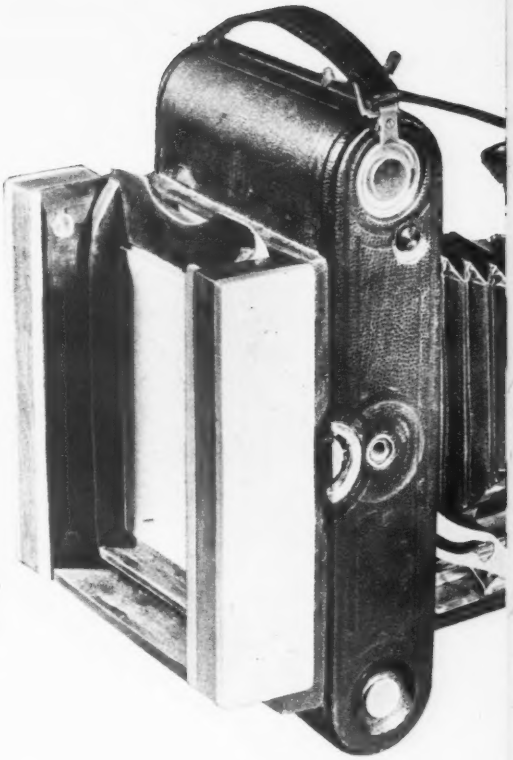
$5.00 Award .....Uncle Remus
A miniature Speed Graphic shot by Jim Bogin of Long Beach, N. Y. Exposed at 1/25th and f-5.6.

CUT FILM ADAPTER

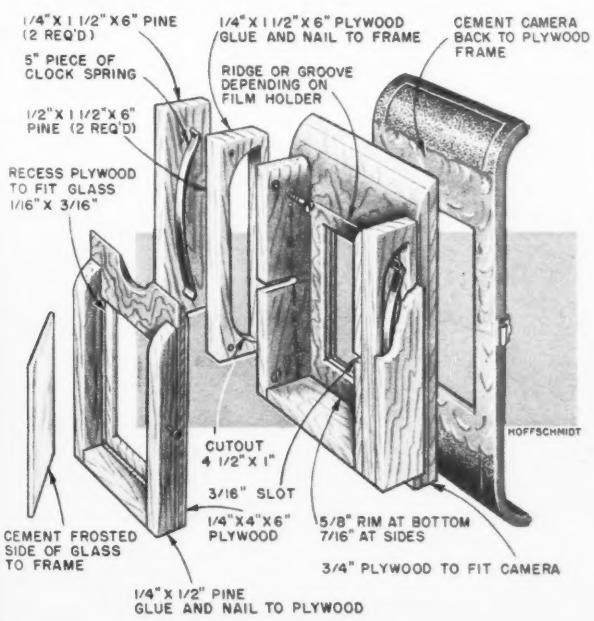
A handy device that will enable you to expose one film at a time in your roll film camera.

THE old post card size folding camera, now usually limited to one or two types of six-exposure roll film can become a versatile photographic instrument with the addition of a cut film adapter like the one illustrated. The same is true with another old time favorite, the No. 3 Kodak, taking 118 film. The most practical cut film size for the adaption is 3¼x4¼, although 2¼x3¼ may be used if the reduction in coverage is not objectionable. Mounting details, in either case, will depend on the individual camera, though construction of the unit will be as shown in the drawing. If the smaller film is to be used merely reduce the size of the parts proportionately.

Before starting to make the adapter, procure several cut film holders in size you are going to work with.—*George Daniels* •



Post card camera fitted with a 3¼x4¼ cut film adapter. Smaller size can also be fitted if desired.

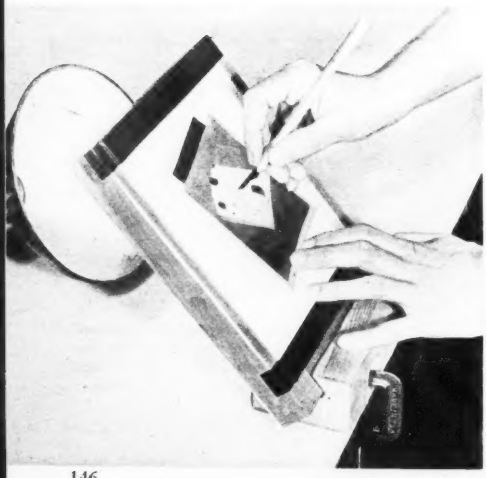


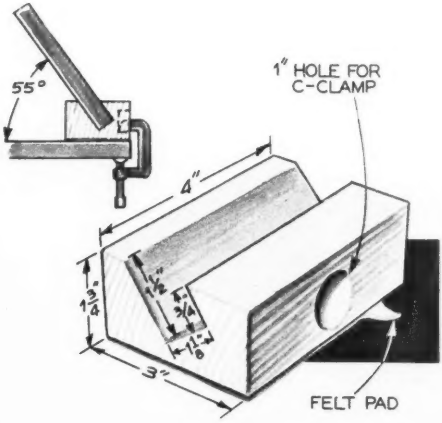
For exact focusing, the frosted side of the glass (which faces the lens) should be 3/16 in. from the forward surface of the frame.

photo handies

Here I am! Tabs and labels on cut film holders to identify black-and-white or color film are fine but you can't see them when the holders are standing upright in the camera case. Better method is to stick colored cellophane tape on slide handles.

Retouching Stand. A 5x7 printing frame can be readily converted into a retouching stand if you insert it into a block of wood cut as shown in the drawing. Cut the groove with a dado cutter set at a 35° angle.

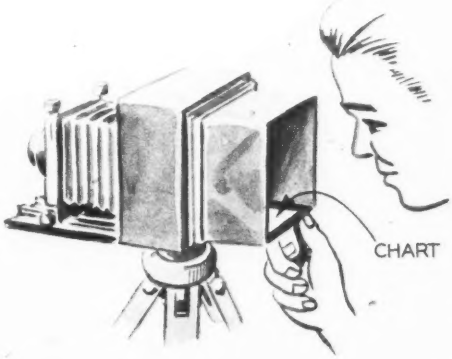




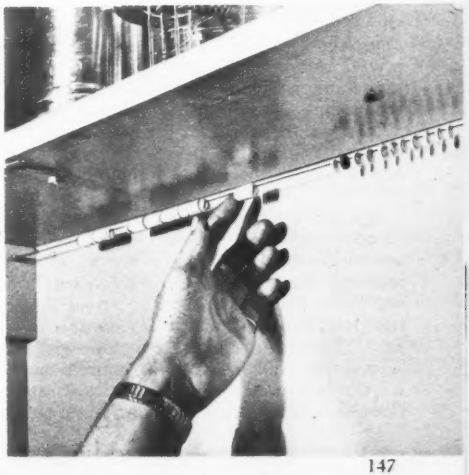
Timer. An inexpensive, but efficient timer consists of a flasher button and a ruby lamp in an extension socket near the enlarger or printing box. Count the flashes for printing and dodging. Light is easily seen without looking directly at the bulb.

Bottle Filler. A length of short hose attached to your darkroom sink faucet will come in mighty handy for filling solution bottles as well as for washing prints. The type commonly used in the kitchen or bath is fine. Simply remove the sprinkler head.

Handy Reference. The printed exposure table supplied with all cut film and film packs can be kept handy for consultation if you just fasten it to the bottom of your ground glass focusing hood with tape.



Point Rack. Your darkroom can very well use this pool room fixture if you can't remember how many rolls of film your developer has processed. String up 50 buttons; have each tenth one of different color.



M. I.'s Vacation Home

[*Continued from page* 107]

dozen colors. We wrote the manufacturer and received detailed instructions on how to use it.

Set the lower bunk 6 to 8 in. farther out from the wall than the upper bunk. Decide on the height you want the lower bunk to be, subtract 8 in. for the cushion, and nail together a frame that high from the floor. We made ours a little higher than normal to keep the dogs from licking Jane's face when she's sleeping. Make two frames for the cushions 71 in. long and 29 in. wide. Use 2x4's with notched joints and a brace across the middle. Cover the frames crossways with 1-in. scrap, setting the boards about ¾ in. apart for air space. Smooth the corners and the bottom front edges of the frames with a wood rasp and sandpaper.

Lay the frame on a table and center on it first the mattress and then the Boltaflex. Turn back the Boltaflex 3 or 4 in. to give a double thickness over the wood and tack down the leading edge on the underside of the frame. Use upholsterer's tacks or ornamental nails an inch or so apart. Make sure the material is started straight. If it runs off on the bias, you're going to have wrinkles.

Pull the stuff fairly tightly across the middle of the mattress, turn up the edge again and tack it to the side of the 2x4 frame. Start from the center and work evenly both ways to the ends. Finish off the underside of the top bunk with paneling.

For a locking device make a 2x4 opening in the upright supports at each end of the top bunk. Determine the levels, fasten the top bunk to a 2x4 with the hinges, and inset the 2x4 into the rear wall studding. Installed in this manner, the top bunk can be raised and lowered easily and is quite rigid when up. Two short lengths of 2x4 inserted into the side openings will hold it up. Finish off the job with a wall ladder at the head made of ½-in. pipe and flanges, and at the foot with a bookcase which can also hold other odds and ends.

Now you're ready for the floor. If you have a concrete floor in direct contact with the ground, your floor covering should be asphalt tile.

It's the only type of permanent covering recommended for ground floor concrete. It seemed rather difficult and we were wondering how much it was going to cost us to have our floor installed. Then Jane read that Kentile, Inc., specialized in a lay-your-own-floor deal. This sounded good to us, but what color? There were dozens of color combinations. So we wrote directly to the Kentile company at Brooklyn 15, N. Y., and asked them to design a floor for the lodge. We sent them a floor plan and described the interior finishes and colors.

Kentile's design department came back with a beauty. They made bold use of colors with three red bars in the kitchen and entrance areas and set a compass insert that pointed up the big front window. Although our floor was not the smoothest bit of concrete in the world, we laid the tile without trouble according to the instructions contained in the installation kit. Tips that worked well for us: sand down the rough places with a piece of firebrick, which works on concrete like sandpaper on wood, and heat the tiles before laying until they are pliable.

There you are. You're just about through now, with the floor laid. Bring in your kitchen equipment and plug it in. Ground the range to the water intake pipe under the sink. You'll want your guns and fishing rods handy, so drill a few ½-in. holes in the wall at a slight slant and set in birch dowels for pegs. There's a space behind the Dutch door for another half dozen pegs on which to hang jackets and things. And you might run a line of pegs around the utility room at head height, say 30 pegs or so, for boots and tools and fishing gear. You have storage space over the bathroom, inside and over the closet, under the bunks and in the utility room. In the bathroom, between the shower and wall, you will have a space 20 in. deep and 14 in. wide. Make a linen closet there with scrap pieces of plywood and keep the distaff side happy.

The lady of the house will be happy enough anyway. The model hunting lodge is designed to require an absolute minimum of housekeeping and you can live like a king in it with 17-jewel ease. The hard-surface materials—walls, floor and bunks—won't catch or hold dust. There may have been some baffling problems and some pretty rough work while you were putting the thing together, but there has been an incredible amount of fun, too. It's finished now and it's yours. Sit down, man, and enjoy the fruits of your labor. •

Using a battery-powered outboard motor, this handsome model really performs beautifully. Construction is mostly of balsa, with plywood added where extra strength is required. For your copy of these complete, full size plans, remit 50 cents to MECHANIX ILLUSTRATED Plans Service, Fawcett Bldg., Greenwich, Conn. Please specify Plan No. 420.

[*Continued from page* 124]

this. "Under some conditions it is possible to use a solution for more than one season without harm," it adds. "The requisite chemical analysis to determine whether a solution is capable of further use, however, is much more expensive than new anti-freeze."

Next point to be cleared up is prevention of corrosion which is responsible for so much radiator leakage, water pump failure and frozen thermostats. Back in the old days chauffeurs used to head off rust by using a few drops of fine sewing machine oil in the water. Today we use either soluble oil or salts to accomplish the purpose. The accepted anti-freezes already contain inhibitors, but often a motorist will start with a corroded cooling system and expect the anti-freeze to clear it up because of the inhibitor. Engineers stress that it is necessary to clean out rust and sediment before installing anti-freeze or inhibitor. That calls for careful use of cleansers in accordance with the specific directions which come with whatever brand is used. Flushing, and especially reverse flushing, may also be needed. But good judgment is important here. Sometimes corrosion deposits are actually sealing embryo leaks around the engine block core plugs or at the bottom of the radiator shell. Stir these up and you may get a leak. The engineers counter with the argument that you'll get a leak anyway, so may as well have it in early autumn rather than when it may cause serious trouble. You can take your choice.

In my book soluble oil makes an ideal rust inhibitor. It has done a remarkable job of holding down corrosion in the case of a 16-year-old car which still drains clear water. No flushing has ever been needed. An exception? Well, I know of a 13-year-old car which has a perfect score on cooling system cleanliness. Only soluble oil inhibitor has been used. Such oil, added to water, gives a milky appearance. The oil deposits a thin protective film on the inside of the cooling system. If rust starts to appear, either not enough oil was used or it has lost its effectiveness. Large cooling systems will take about six ounces for protection over several months. Smaller systems use less. Don't overdo it. And don't be worried by a little brownish foam that may form around the radiator filler pipe. It's probably the inhibitor, not engine oil.

And speaking of leakage, this is the time to go after it in a big way. The permanent-type anti-freezes tend to leak out more readily than the alcohols. If the coolant level has been falling the chances are that (1) the radiator is being over-filled, (2) the engine runs too hot, (3) there is a gas leak in the head gasket, (4) the radiator is partially clogged, (5) the lower hose is collapsing of speed, (6) the water pump sucks air, (7) there are air leaks around the hose connections, (8) water surges forward and out the overflow because of too sudden braking, (9) the thermostat valve doesn't open fully or (10) there is a leak in the radiator. All these can develop without the engine actually overheating. It simply points up the importance of checking into the causes of loss of water.

Car shake used to be a leading cause of radiator damage, but improvements in radiator mounting and front-end suspension have greatly eased this strain despite the fact that today's engine does a heap of shaking, especially during idling, when it rocks in its flexible mounts.

Incidentally, one reason there is so much leakage of anti-freeze these days is because cooling systems are designed to build up pressures as high as 12 pounds. This has been necessary because of the slippage effect of most automatic drives. Something else to bear in mind is the greatly increased tendency toward oxidization when air is sucked in at the lower water hose or around the pump. Main cause of this is radiator clogging. The pump can't draw coolant fast enough, so starts to draw air. It is all accelerated by faster driving.

Salt base anti-freezes are banned for car use because they cause heavy corrosion around water passages and damage the metal portions of cylinder head gaskets as well. Petroleum anti-freezes are considered dangerous in modern engines, partly because they raise the boiling point so high the solder for the radiator may start to melt before the driver realizes what's cooking. Bureau of Standards also lists such compounds as sugar, honey and glycerine as unsatisfactory. Many readers will be surprised to know that glycerine solution will knock the life out of cast iron impeller water pump blades by rapid corrosion.

The alcohols (methyl and ethyl) and ethylene glycol (permanent type because of its high boiling point) are the favorites, and rightly so. A one-third solution of ethylene glycol protects down to 0°. The same percentage of ethyl alcohol guards the cooling system down to + 2° while methyl protects down to — 12°F.

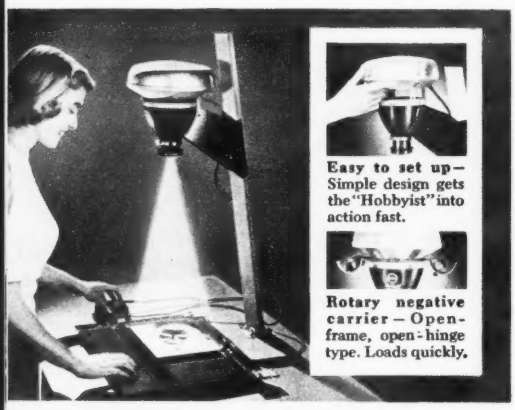
But keep in mind that none protect to this extent if there is leakage and if the lad at the filling station keeps adding plain water. Better do all the checking yourself. It pays. •

Developing, Printing, Enlarging ...a fascinating hobby

So easy to begin, too—and inexpensive

DID YOU KNOW that Kodak offers a complete printing kit for only $4.95 (see opposite page)—that for this small amount you can have the thrill of making prints from your own negatives? Taking the picture is really only half the fun. Developing and printing can double your enjoyment from photography. And for less than $50 you can acquire a fine enlarger that will let you select the ideal portion of your picture ... eliminate unwanted areas ... make the final print even more than what you hoped for when you clicked your camera shutter.

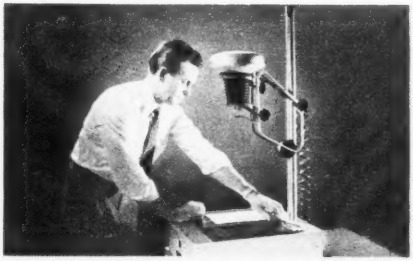
On these pages you see just a few examples of a wide choice of equipment now on display at your Kodak dealer's. He will be glad to start you off right and help to keep you within your budget.



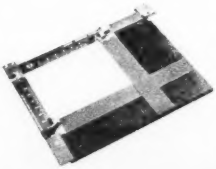
Easy to set up—Simple design gets the "Hobbyist" into action fast.

Rotary negative carrier—Open-frame, open-hinge type. Loads quickly.

Complete enlarger — less than $50. The Kodak Hobbyist Enlarger uses cold-light illumination—perfect protection for negatives. Only reflected light reaches negatives. Integrating-sphere lamphouse, together with specially created interior reflective coating, results in even light distribution. Newly designed negative carrier loads easily. Knobs are provided for locking both elevation and focus. Enlarges up to 7 times. Kodak Enlarging Ektanon Lens, 89mm., *f*/6.3, helps produce crisp, sharp enlargements. For negatives through 2¼" x 3¼". $44.



Fine, versatile enlarger—the Kodak "Flurolite"—$99.50 (without lens). Advanced design ... integrating-sphere light source for even illumination ... easy-loading rotary negative carrier. Focusing and elevating knobs may be used at the same time. With accessories, the 2¼" x 3¼" "Flurolite" quickly converts for copying and many other uses.

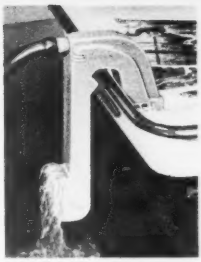


Eliminate unwanted areas in enlargements—Select ideal portions with the help of Kodak Masking Easel, 11 x 14. For use with any vertical enlarger. Can be adjusted for ¼- to ¾-inch margins. $9.60.

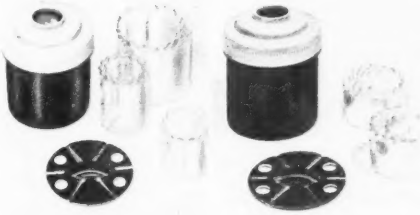
Everything you need for printing—Kodacraft Printing Kit contains rocker-type trays, printing frame, paper, graduate, Kodak Tri-Chem Pack, thermometer, stirring rod. $4.95.

For developing and printing – Kodacraft Photo-Lab Outfit includes printing frame with masks for popular negative sizes, Kodacraft Roll-Film Tank, other essentials. $8.75.

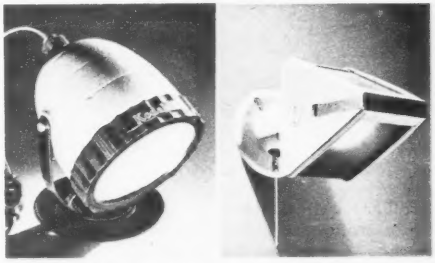
Includes metal printer – Kodacraft Advanced Photo-Lab offers complete developing and printing equipment. Everything can be packed in printer for handy storage. $14.10.



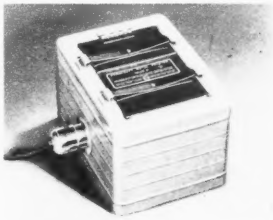
Converts ordinary tray into effective washer—Kodak Automatic Tray Siphon. Washes prints and films automatically. Hypo-laden water is siphoned out as fresh water enters. $4.50.



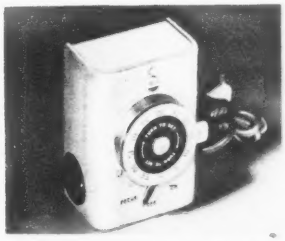
Kodacraft Roll-Film Tank *(left)* is easy to load, pour; holds 16 oz. of solution. After loading, it can be used in lighted room. Includes aprons for 620-120, 616-116, and 127 films. $2.53. **Kodacraft Miniature Roll-Film Tank** *(right)* permits simultaneous development of two rolls of 35 mm. film or Bantam-size film (828). $2.53.



A Safelight that adjusts quickly—Kodak Adjustable Safelight Lamp *(left)* has double-swiveled shank and bracket. $7.40. **The new Kodak 2-Way Safelamp** *(right)* provides either direct or indirect illumination—or both. For light in two directions, simply take out removable metal panel in back and replace with a safelight filter. $4.50.



Kodacraft Metal Printer, Model A—accepts negatives from 35mm. up to 4 x 6 inches. Metal construction with hinged platen. An easy-to-follow folder of instructions is supplied. $6.95.



For timing contact and projection printing – Kodak Electric Time Control. The printer or enlarger plugs into the control. Automatic timing 1 to 57 seconds. Repeat timing possible. $13.50.

Spring-wound Kodak Timer—covers all intervals up to 60 minutes, has both minute and split-second hands. Tilting base permits adjustment to any angle. $7.20.

Your Kodak dealer will be glad to demonstrate this equipment for you. Make his store your headquarters for all your photo needs.

Prices subject to change without notice

EASTMAN KODAK COMPANY, ROCHESTER 4, N. Y.

Kodak
TRADE-MARK

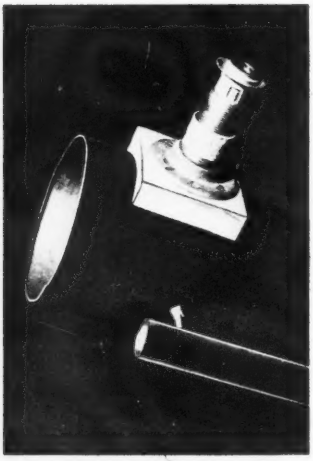
The Amateur Telescope Maker's Page

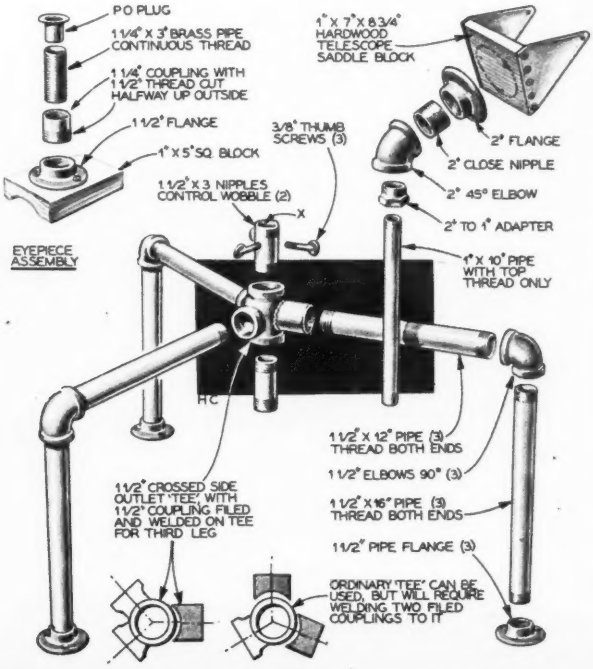
A Pipe Fittings Telescope

Michael Pessah of the Bronx, N. Y. and his 100 power six inch telescope made chiefly of pipe fittings.

AFTER being bitten by the bug, genus *astronomicus*, I finally mustered the courage to send for MI's Plan P-6 describing the construction of a high-powered astronomical telescope. I purchased a 1x6 in. plate glass blank and tool, seven grades of Carborundum, pitch and rouge and started on my walkathon. [A good part of the job of making a telescope mirror consists of walking around a barrel.—Ed.] At this point I would like to give some advice to all [*Continued on page* 154]

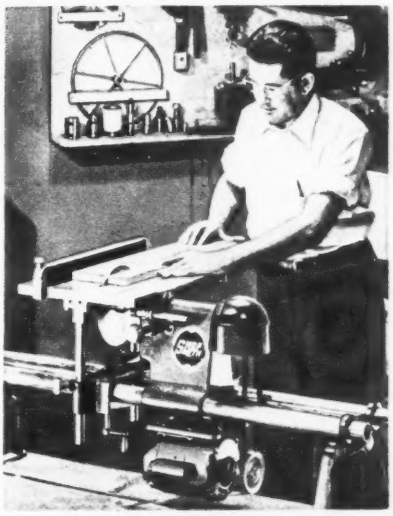
The eyepiece adapter. As can be seen from the drawing, it consists entirely of fittings which can be bought at a plumbing supply store.





125,000 ELECT SHOPSMITH

Complete workshop in single unit outperforms and outsells individual power tools—some of SHOPSMITH'S 125,000 owners tell why



OWNER DEMONSTRATES SHOPSMITH "It's a home appliance for men," says SHOPSMITH owner Earl Swift. "Eight-inch circular saw. Twelve-inch disc sander. Thirty-three-inch wood lathe. Vertical and horizontal drill presses. Each a multi-purpose tool in itself and all engineered into one compact unit. No wonder it's America's largest-selling power tool!"

HOMEOWNER: "Thanks to SHOPSMITH, I can have a big-capacity power shop in my crowded basement. SHOPSMITH, mounted on retractable casters, can be rolled into a corner only 18" x 60"! It's a lot of shop in a little space!"

ENGINEER: "Precision is my business. I checked SHOPSMITH from spindle tip to tail-stock before I bought mine. It's built with the kind of precision you'd expect to find only in the largest machine tools. That spindle tip, for example, is machined to a tolerance of .0002". And that's real precision!"

EXPERIENCED WOODWORKER: "In woodworking, there's no substitute for the *right* tool. And with SHOPSMITH, you always have the *right* tool for any sanding, sawing, turning or drilling job. I've replaced my single-purpose tools with SHOPSMITH. It does jobs I couldn't begin to do with my other tools."

BEGINNER: "I don't know much about woodworking—or power tools. But I'm learning fast with SHOPSMITH. It's plenty easy to operate, no complicated adjustments. It's safe. Above all, it turns out work that makes me look like an expert."

CARPENTER: "Most of my work is on big projects. No flimsy, bronze-bearing tools for me. Take SHOPSMITH, now. There's a tool with the kind of capacity I can use. It can do 1001 jobs too big or too heavy for most home workshop tools."

ONLY $189.50

complete except for ½-hp. motor ($34.50). You can see SHOPSMITH demonstrated at leading hardware and department stores or at any Montgomery Ward store.

GET all the FACTS FREE

16-PAGE BOOK filled with detailed specifications, accessories.

MAGNA ENGINEERING CORPORATION, Dept. 220-N
at factory nearest you
12819 Coit Road, Cleveland 8, Ohio, OR
Menlo Park, California
Please send me free 16-page SHOPSMITH catalog.

Name _____

Address _____

City _____ State _____

Custom-Crafted Jewelry

[*Continued from page* 135]

of silver wire. But first let's consider the materials and how they can be acquired.

The raw crystalline stones, the most important ingredient in the design, include about a dozen varieties of semiprecious minerals in a wide range of colors. There are the delicate pinks of rose quartz, the pale yellows and greens of beryl, the violet of amethyst, the deep green of tourmaline, the acid blue-greens of chryso-colla, the golden-orange of topaz, and the dark red-brown of citrine. Such stones range in price from 50 cents each for small examples suitable for use in earrings or as bracelet charms, to more than $5 for large chunks for a pendant or massive bracelet. They can be purchased from gem companies. If minerals are found in your part of the country, dig them up yourself, or failing that, use any curiously shaped pebble you might find in your own back yard. The result may not appear quite so precious, but it will be interesting.

Silver wire may be purchased from refiners in any large city, and the silver chain may be bought by the foot from many craft supply companies in New York City.

Any kind of metal wire may be used in place of silver. It may be copper, brass, aluminum, or gold. However, it must be soft annealed, so that it can be readily manipulated. It is best to work with two thicknesses of wire. In this way a heavier weight of wire can be used for the frame around the stone, and the thinner, softer wire used for actually tying the stone into place. For easy handling the light wire may be about No. 24 or .020 gauge. This is considerably thinner than the wire in a paper clip. The heavier wire can be any thickness up to ⅛ in. or more, depending upon the size of the stone and the effect desired.

Begin by studying your stone, deciding which side will be the back and which the front. The most irregular and gleaming surface should be the front, while the flatter side generally works best as the back. Take a length of your heavier wire and bend it around the outside edge of the stone. The wire will be soft and no pliers will be needed for this operation. Don't try to get a perfect fit; just make the wire conform in an easy way to the general outline of the stone.

Then with the pliers coil the wire firmly upon itself at the point where it joins. This will be the top of the pendant, and you will find that you now have an irregular loop into which the stone fits easily. Bend the extending piece of wire downward and coil it once again, and you will then have an additional loop from which the pendant may be hung.

Now wind an end of your light-gauge wire around the heavier framework, mooring it fast. Place the stone in the frame, and holding it there, thread the thin wire back and forth across the front and reverse side of the piece, coiling it on the framework at convenient points. The thin wire is pulled tight with the pliers each time it is wrapped around the frame.

In a short time the stone is crisscrossed in a pleasing way with metal filaments. The irregular contours and bumps on the stone will help to hold it securely. Too much crisscrossing wire might hide the stone and make the effect monotonous. Excess wire is cut off and the ends tucked out of sight between the stone and the frame. A ring large enough to accommodate the chain can then be fashioned from a small section of the heavy wire and attached to the top loop of the pendant. A bit of buffing, by hand or by machine, will bring a brighter luster to the metal. The pendant is now finished, and a more handsome piece of jewelry would be hard to imagine. •

Telescope Maker's Page

[*Continued from page* 152]

prospective telescope makers. Make friends with all the power tool owners you know. Their assistance will come in mighty handy. After completing the mirror and the cell, I began to work on the yoke. This consists of a rectangular piece of hardwood, 1x7x8¾ in., and two triangular metal plates ¼x7x8 in. See the details in the drawing. I had the tube made by a tinsmith, out of heavy, but vibrationless, No. 16 gauge black sheet metal.

I had now finished grinding, and succeeded in making a pretty good pitch lap for polishing. As I polished, I could see the face of the embryo mirror becoming smoother and shinier, with a silvery sheen, beginning to cover it. Slowly but surely, the telescope began to take form. I started fitting the mirror to its cell, the spider with its prism, and the eyepiece adapter into the tube.

And then the tripod. The problem with the tripod broke down to this: I needed a five-way fitting with three outlets, 120° apart, and two outlets running up and down. I searched all through the plumbing catalogs, but could find nothing to fit my specifications, so with my father's help (a plumbing contractor), I decided to make one. We began with a three-way 1½ in. crossed-side outlet tee. But finding we needed another outlet for the third

[*Continued on page* 190]

★ When *Marfak* is rubbed with a finger, it forms a fluid film. Yet it keeps a tough, protective "collar." That's what happens when bearings get *Marfak* chassis lubrication from your Texaco Dealer. The working lubricant is "sealed in." And there's protection for 1,000 miles or more! *Marfak* clings tight to points of wear and friction. It's compounded to resist wash-out, squeeze-out, jar-out. That's why you enjoy longer lasting "cushiony" driving ease. Get *Marfak* lubrication today. See your Texaco Dealer, *the best friend your car ever had.*

TEXACO

Faithfully yours 50 for Fifty Years

THE TEXAS COMPANY

TEXACO DEALERS IN ALL 48 STATES

Texaco Products are also distributed in Canada and in Latin America

TUNE IN: On television—the TEXACO STAR THEATER starring MILTON BERLE. See newspaper for time and station.

Train Display Shed

[*Continued from page* 126]

the most interesting part of the project, from my viewpoint anyway. The scenery. Use window screening or burlap as a base. The first thing to do is to make up the form for the mountains. I use small strips of cardboard about one inch wide that are mounted between each section of track to form ridges and gullies. Soak six-inch squares of newspaper in a starch solution overnight. Take the wet paper and form it around and over the cardboard strips. No glue is used as the paper will hold when dry. All types of contours may be molded as no matter what you will mold there will be a prototype of it somewhere.

If you want extra strength in the formations at certain points, such as at the entrance of a tunnel, it is best to use more than one layer of newspaper. From three to four will be found strong enough to support any amount of plaster you wish to use.

Now about the plaster. Plaster of paris will dry too fast. Other types of plaster will shrink when dry and pull the form out of line. I use Scenic Model Plaster which you can buy at any hobby shop. This plaster will dry in twenty-four hours depending on how thick it is brushed on. Mix the plaster as directed on the package. Rough spots can be made by twirling the brush and plaster as it is brushed on. A little practice at this and we can get the earth as rough as you want it. To represent limestone formations run a wide tooth comb through the wet plaster. This will result in tiny ridges on the mountain side.

Real stones may be used to form stones in the mountain side and also larger ones can be made to represent rocks near the track side. The contours may be changed slightly by adding extra plaster here and there. Special work will have to be done on the tunnel on the top track. This is just a hole in the side of the mountain. It will have two sides that we will be able to look at, as well as the top, or the tunnel's roof. Plastering inside this small tunnel is a problem but with a little luck and patience we get the little so and so plastered. With the plastering done we swing down to the bottom track and complete the work on the lower tunnel.

My little car storage will hold 18 cars and an 0-6-0 switcher with tender. It's mounted high enough on the wall of the hobby room to be out of the hands of curious kids. Most of my cars were built from Silver Streak Kits as I like the type that don't fall into one piece when you open the box. Other kits I've used include Athern, Ulrich, Roundhouse and a couple I made myself.—*Robert Hegge* •

Before You Paint

[*Continued from page* 113]

surface, followed by thorough removal of the sandpaper dust, and the application of the paint or enamel in accordance with the manufacturer's instructions will suffice.

If you have walls or a section of a wall that is now papered, and which you wish to paint, this may ordinarily be done with modern wall finishes, but there are two precautions that must be taken. The paper must be bound tightly to the surface, for otherwise the finished paint job will appear to have lumps and uneven spots. If the paper comes off at a later date, of course, the paint will come off with the paper.

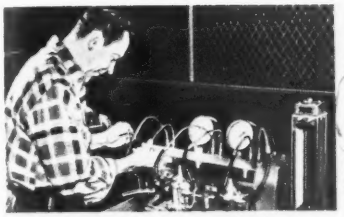
To determine whether or not the wallpaper is bound tightly to the surface, feel it very lightly with your hand, and you will be able to find bulges or blisters that might be under the paper. If the paper shows any signs of looseness, it must be removed before painting. You must also be sure that the colors in the wallpaper will not "bleed" through the paint. Colors ordinarily used in wallpaper will not have this trait, but some reds and oranges will unfortunately bleed through. To test for bleeding, small section of the wallpaper on an inconspicuous portion of the wall, should be test-painted. Allow the paint to dry thoroughly, and if after several hours no bleeding is apparent, you can be fairly certain that the wall paper colors will not bleed.

Some papers are embossed or have a design that is raised and in relief. It must be understood that a coat of paint over such paper will not obliterate the embossing and the design will show through the painted surface. There is nothing that can be done about this, short of removing the paper.

If it is necessary to remove wallpaper, this can be done by saturating a sponge with warm water and soaking the wallpaper until it begins to separate from the wall, at which time it can be removed with a scraper. The wall should then be allowed to dry thoroughly before painting, and it may be necessary to apply a good priming coat to such walls, as they will generally be quite porous and nonuniform in texture.

The important factors in any paint job are the use of materials manufactured for the type of surface to be painted, correct preparation of the surface, the application of the paint as recommended by the manufacturer—and cleanliness. Thus, after the surfaces have been prepared, they should be carefully cleaned or dusted. A soft brush or a clean rag will serve. Should there be any grease or soot on the surfaces, as is often the case in kitchens, they must be completely removed. •

4 big reasons why Genuine Ford Parts are best for your Ford!



Careful laboratory tests prove that Genuine Ford Parts live up to Ford specifications.

They're MADE RIGHT

Each Genuine Ford Replacement Part reflects the designing and manufacturing skill of the men who designed and built your Ford.

Genuine Ford Parts are easy to work with in repair jobs.

They FIT RIGHT

Because every Genuine Ford Part is designed right, it will last longer. Every Genuine Ford Part is exhaustively tested by Ford engineers.

Genuine Ford Parts are track tested in scorching desert heat on Ford's Arizona test track.

They LAST LONGER

Save time and money . . . specify Genuine Ford Parts. They're perfect counterparts of the parts built into your Ford when it was new.

Tough tests on Ford's Dearborn test track prove that Genuine Ford Parts can take it.

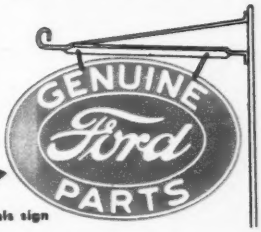
...and they're TRACK TESTED

Grueling track tests on Ford test tracks prove that there are no better parts available for your Ford.

When your Ford needs service attention take it where you see the Genuine Ford Parts Sign

Come in... "LET'S GET ACQUAINTED"

Save by Specifying



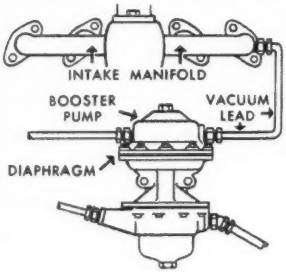
Available at all Ford Dealers and selected independent garages who display this sign

Care and Feeding of Engines

BY S. P. CORP

THE CASE OF THE SLOW WINDSHIELD WIPER

Most cars have a windshield wiper booster pump mounted on the fuel pump. Any time your wiper operates at less than 80 strokes per minute, check this booster pump for trouble—because such trouble can affect engine operation.



For example, an air leak in the vacuum line (see arrows) will cause a lean mixture at the end of the intake manifold, making the engine miss when idling. Such a leak, if neglected, will cause sluggishness in the valves of the end cylinder, eventually burning the valve seats.

Remove vacuum line at intake manifold. Plug the hole in the manifold and run the engine. If engine idles smoothly (when it missed before) the trouble is in booster pump or vacuum line. If there is any trace of oil in the line, your booster pump needs a new diaphragm—because a cracked or damaged diaphragm has been causing oil waste. The oil you see has been sucked up from the crankcase and delivered to the intake manifold, to be burned with fuel.

If your windshield wiper seems slow, at any engine speed, check the booster pump!

TEST SHOCK ABSORBERS

Shock absorber trouble can cause hard steering, pitching on turns, and hard riding. Check each corner by trying to bounce the car, holding the end of a bumper. If it bounces several times before coming to rest, the shock absorbers need attention. To remove, take off upper and lower holding nuts from rubber bushing on studs. Lock lower end of absorber in a vise, and pump up and down full length of travel. If it sticks at any point, or is hard to pull, it should be replaced. If there is no resistance, valves are leaky and it should be replaced. Normally, there should be more resistance in extending than in compressing.

NEW FREE BOOK ON CAR CARE

Send for your free copy of the new illustrated booklet, "MORE POWER, Less Oil, Less Gas" which tells you how to keep your car running better. It also tells you all about Sealed Power KromeX Ring Sets, engineered especially to fight heat, friction, abrasion, and corrosion in late-model cars and trucks. Sealed Power Corporation, Dept. J-10, Muskegon, Michigan.

Opportunity C.O.D.

[*Continued from page* 58]

University, a correspondence institution in Chicago. L. M. Bennett, a school executive, says most of the students are taking training in line with their work experience—bookkeepers and clerical workers study higher accountancy; shipping and rate clerks train in traffic management; bank employes and credit men aim at law.

Do they make the grade? More than 4,000 LaSalle diploma holders have won their Certified Public Accountants' Certificates; thousands of others have passed bar exams; many have vaulted into high political, judicial and business positions. LaSalle, now in its 44th year, has enrolled more than 1,300,000 students since its inception. It specializes primarily in the higher business training fields, offering courses of collegiate rank.

And specialization really seems to be the order of the day in most correspondence schools. You'd probably be surprised at the wide variety of fields they cover. For instance, there's the Beery School of Horsemanship, the National School of Meat Cutting, the Chicago School of Watchmaking, the Washington School of Art, the Sprayberry Academy of Radio, the Blackstone College of Law, the Lewis Hotel Training School, the Academy of Aeronautics, DeForest's Training, Inc., for television-radio-electronics, Hollywood School of Cartooning, N. W. School of Taxidermy, Famous Artists Course, Weaver School of Real Estate and National Schools Radio-Television and Automotive-Diesel courses.

Yes, there's practically nothing you cannot study at home. You can even learn how to improve your memory and concentration!

Dr. Bruno Furst runs the School of Memory and Concentration in New York City and gives both resident and home-study courses. The mail-order section consists of ten sessions, and teaches you how to remember names and faces, stories, historical dates, telephone numbers, playing cards and the like.

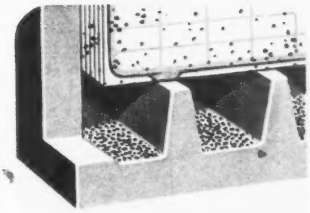
Frank F. Chesnul of Brockton, Mass., was a pick and shovel laborer, earning $12 a week, when he enrolled at a correspondence school. Then he took a civil service test in which he was pitted against a number of college grads, and came through with the third highest rating of 98.2 per cent! Now he has a permanent job with the U. S. government at many times his laborer's wages.

He took his training at the Franklin Institute of Rochester, which has been preparing men and women for U. S. Civil Service jobs by mail for half a century. These jobs include,

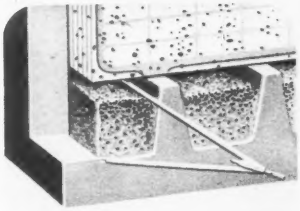
[*Continued on page* 160]

Which battery do you want in your car?

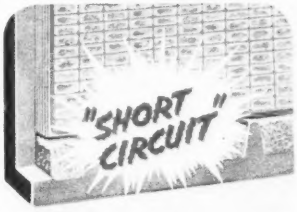
1. In ordinary batteries, small particles keep flaking off positive plates . . .



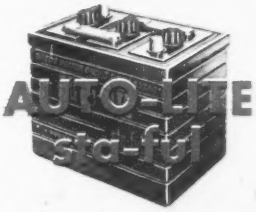
2. so ordinary design batteries must have large sediment wells at bottom of case to hold these particles.



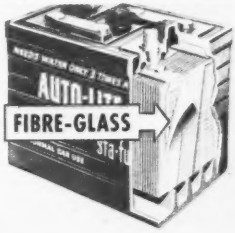
3. Even these sediment wells in ordinary batteries aren't big enough to hold flaking particles from positive plates . . .



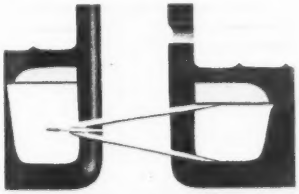
4. so particles pile up and short circuit plates, causing failure.



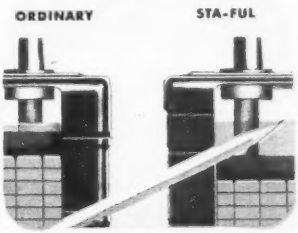
5. But in the Auto-Lite "Sta-ful" Battery, every positive plate has a Fibreglass retaining mat protecting it . . .



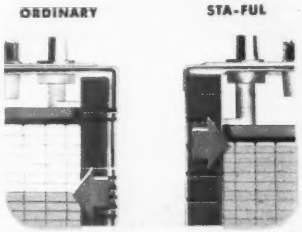
6. to hold the active materials in place to reduce shedding and flaking.



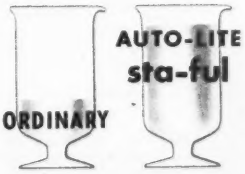
7. Side-by-side view shows that the Auto-Lite "Sta-ful" Battery doesn't need the extra space at bottom that ordinary design batteries do. So extra space . . .



8. in "Sta-ful" Battery is moved to top where it holds more electrolyte, giving room for over 3 times the liquid reserve in the "Sta-ful" as in ordinary batteries.



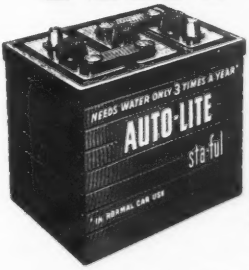
9. Here's proof of performance! Equal water evaporation shows how the Auto-Lite "Sta-ful" extra reserve keeps plates covered and active.



10. That's why "Sta-ful" needs water only 3 times a year in normal car use. Auto-Lite "Sta-ful" Batteries give longer life, too, in tests conducted according to minimum life cycle standards.

AUTO-LITE BATTERY CORPORATION
Toledo 1 Ohio

AUTO-LITE sta-ful



...needs water only 3 times a year

IN NORMAL CAR USE

"One double fudge sundae... and a tube of 'DUCO' CEMENT!"

Fix it for keeps
WITH
DU PONT DUCO CEMENT

DOLLY LOST HER HEAD?... It's no great catastrophe! Put her back together with "Duco" Cement.

REPLACE A COMPACT MIRROR with easy-to-use "Duco" Cement and it will stay in place for keeps.

UMBRELLA HANDLES *will* come off... but they go back on permanently when fixed with "Duco" Cement.

MAKE FISHING LURES and secure loose line guides with tough, waterproof Du Pont "Duco" Cement.

STRONG, TRANSPARENT FLEXIBLE, WATERPROOF

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
... THROUGH CHEMISTRY

Opportunity C.O.D.

[*Continued from page* 158]

among others, port patrol officer, patrol inspector, correctional officer, clerks of all grades, accountant, auditor, postmaster, meat inspector—secure jobs, with guaranteed pensions and good pay.

Lessons include texts, maps when necessary and also many exams similar to the official ones. In addition, the Institute notifies students of forthcoming exams, tells them how and where to file applications and supplies unlimited advice on all civil-service problems.

In far-off Haifa, Israel, one H. Petrowner mailed his lessons across the sea to another institution, studied long and hard, and finally opened up a small appliance-repair business. Petrowner worked hard and he prospered. Today, only a short while later, he already has three men working for him.

His alma mater across the ocean is the Christy Trades School of Chicago, which for the past 18 years has been training ambitious men at home in their spare time in two money-making courses, drafting and electrical appliance service and repair.

Christy success stories are legion. James Vuncannon has the largest and best appliance shop in Booneville, Miss. A. V. Herron and his wife operate their own shop in Bloomington, Ill. R. T. Richardson owns the Ace Electric Co. of De Queen, Ark.

The files of the National Radio Institute in Washington also bulge with letters from grateful grads who have won their spurs in radio and TV.

Young men from all over are getting a mail-order education from NRI, studying for jobs in government, aviation and police radio, electronic control, merchandising, television and practically every phase of servicing and communications. Many are fixing friends' and neighbors' sets after a few lessons, and earning extra cash.

Donald Mokma of Holland, Mich., says that before he finished a third of his course, he had all the work he could handle. George Madore of Holmes, Pa., earns $85 a week and has pulled down $1,000 in his spare time. Others have top jobs with broadcasting stations, with radio and TV stores and factories, with government departments.

Now switch to a British prisoner of war camp deep inside Germany during the last war. A Tommy lies on his hard bunk, a notebook and text beside him. He is one of hundreds of British prisoners who received free lessons by mail while being interned. Many hundreds of men actually passed their exams while in captivity.

[*Continued on page* 163]

For preparing new surfaces

smoothing seams and joints

refinishing furniture

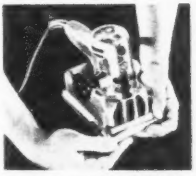
removing old paint

4 EXCLUSIVE FEATURES

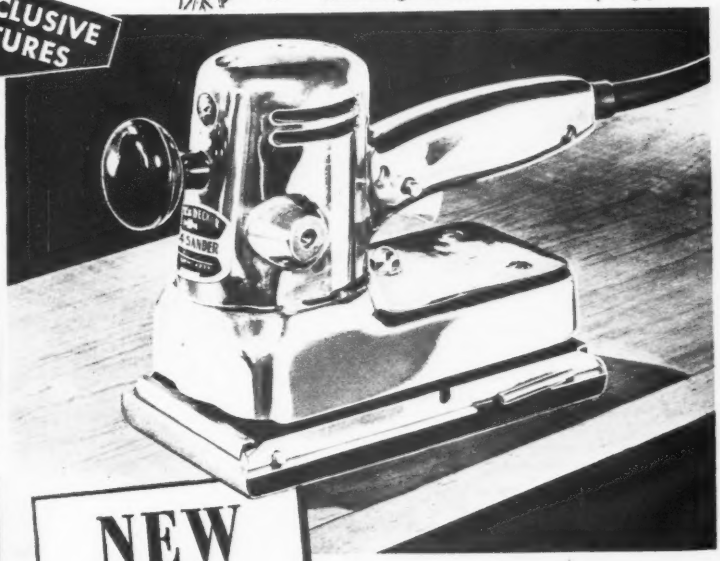
KING-SIZE BOTTOM PLATE extends beyond body of tool for sanding in very close quarters.

MODERN SWITCH HANDLE is located close to housing for better control, less operator fatigue.

AUXILIARY KNOB HANDLE gives choice of three positions for ease in sanding close to obstructions.



UNIQUE PAPER HOLDER stays open when attaching or detaching paper, frees both hands for job.



NEW Black & Decker Utility No. 44 SANDER only $46.95

- "Satin-Smooth" Finish, *every* time, in *any* direction, because tool produces small 3/16" orbit 4250 times per minute!
- Ten Times Faster than hand sanding on wood, metal, plastics, compositions!
- Light Weight, only 5½ lbs., easy to use . . . helps even beginner do professional jobs!

Black & Decker UTILITY PORTABLE ELECTRIC TOOLS

Bob Davis says:

"Take it from a guy who cut his eyeteeth on tools, this new B&D Utility No. 44 Sander is a top buy! It's smooth-running, gives a finish like satin and it's priced below tools of comparable quality! Just attach a 3⅔" x 9" sheet of abrasive paper; plug it in any electric outlet (A.C. or D.C.); and you're ready for the finest finish sanding — no final hand sanding needed! When you want a real tool, *not* a mere toy, pick the *brand the experts choose* . . . BLACK & DECKER!"

WRITE FOR *FREE* BOOK! Packed with helpful, money-saving hints on home jobs!

Send to: Home Service Dept. H10X, THE BLACK & DECKER MFG. CO., Towson 4, Md.

Name.....

Address.....

City & State.....

POWER like this you've never seen

ride Harley-Davidson's NEW '53 Twin for the thrill of a life

ADVANCED ENGINE DESIGN

- 45 degree V-type Overhead Valve Engine — 55 horsepower
- The only motorcycle engine in the world with Hydraulic Valve Lifters
- Hemispherical Combustion Chambers for maximum performance
- Valve Rotators prevent carbon on valve seats and hot spots on valves
- Aluminum-bronze cast-in valve seat inserts reduce valve wear and assure proper valve seating

Sensationally new! Another reason why Harley-Davidson continues to lead the field with the newest, smoothest riding, best performing motorcycles in the world. The new '53 Twin sets the pace for thrills with an improved 74 OHV motor . . . a twin that's packed with features that lead the way for the entire automotive industry.

Here's flashing power for swift, fun-packed miles. Tops, too, in comfort, reliability and sleek, streamlined styling. See and ride the sensational Hydra-Glide at your dealer's today. Bring a buddy along. Or send 25 cents for illustrated literature and a copy of the Enthusiast magazine, filled with exciting action pictures and stories.

Harley-Davidson Motor Co., Dept. MI, Milwaukee 1, Wis.

HARLEY-DAVIDSON

HYDRA-GLIDE®

SAVE YOUR CAR—IT MAY HAVE TO LAST A LONG TIME

Mechanics agree that most engine wear occurs because oil drains into the crankcase during stops. This gives acids a chance to attack unprotected metal and is the cause of DRY STARTING* which wears out engines . . . leads to costly repairs.

To prevent "Engine Ulcers," use Miracle Power in gas and oil. Miracle Power contains colloidal synthetic graphite in suspension. This graphite clings to metal . . . holds oil . . . lubricates parts even if oil is absent . . . protects them against DRY STARTING and acid etching. And you save gas and oil because better lubricated parts waste less power.

Try Miracle Power next time you get gas.

Miracle Power Division

THE AP PARTS CORPORATION
560 AP BUILDING, Toledo 1, Ohio

At gas stations, garages, Kaiser-Frazer, Ford and other car dealers or use this coupon for introductory offer.

THE AP PARTS CORPORATION
560 AP Building, Toledo 1, Ohio

Enclosed find $_____ for which please send me *postpaid:*

_____ trial cans of Miracle Power at 75c each (1 for gas, 1 for oil)

☐ Please send me free literature on making my car last longer.

Name_____

Address_____

City_____ Zone_____ State_____

© AP Parts Corp., 1952

Opportunity C.O.D.

[*Continued from page* 160]

These lessons were sent by the famed British Institute of Engineering Technology, a global school which in the past 21 years has trained more than a quarter of a million students in its ten branches.

The BIET is the parent organization of the Canadian Institute of Science and Technology, which has headquarters in Toronto, Can. It offers home study courses in a vast variety of subjects, including civil, mining and structural engineering, mechanical engineering, plastics, electrical engineering, radio, aeronautical engineering and various general groups including salesmanship, journalism, advertising and languages.

Just who needs home study? Who can profit most from mail order education? MI sought out the National Home Study Council in Washington for the answer and this is what its officials told us.

Young men and women who have finished school, but now being employed, see a definite goal ahead and home study as the direct means of reaching it.

Men and women who were deprived of the opportunity of going to school when young.

Young men and women who are ambitious but cannot stop working to go to school.

Employed men and women who want to better their present conditions—who need technical or specific training for their present line—or who want to get out of a rut or blind alley, perhaps by changing entirely their business, trade or profession.

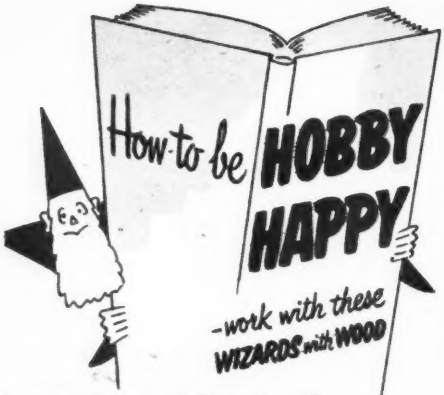
Men and women who want to keep abreast of the time, and to retain and add to the general culture already received in school and college.

High school and college graduates who want to continue special training for advanced technical or executive positions.

Men and women of junior and senior executive rank, who realize the need of constant refreshing on the fundamentals and newest developments within their fields.

Right now, the U. S. Government has become the largest single patron of the nation's correspondence schools. Its Armed Forces Institute, with headquarters in Madison, Wis., has made available more than 300 different courses to men and women in the Army, Navy, Marine Corps and Coast Guard. Up to Janu-

[*Continued on page* 168]



Do you make or mend things of wood? Then you want them to turn out reliably right. To succeed every time, use Weldwood Glue, Firzite and Satinlac. Ask for them at hardware, paint or lumber dealers.

Gets that blond or pickled effect—

Produce those magical "woodsy" effects — on hard wood or soft, plywood or solid lumber with White Firzite. For light pastel tones, tint with Colors-in-Oil. (On fir plywood stain jobs, tame that wild grain with Clear Firzite.)

WHITE FIRZITE®

Gets that Natural-Wood Finish

— *without shellac or varnish.* On furniture, panelling or woodwork, there's nothing like Satinlac. Brings out natural grain and color beauty of any plywood or solid wood. Avoids that "built-up look; will not turn yellow or darken with age. "Water-clear," easy to brush or spray; dries ready for next coat in 2 or 3 hours.

SATINLAC®

The Wood Glue you can rely on!

To make things or fix things, use Weldwood Glue for all wood-to-wood bonds. Makes joints stronger than the wood itself. Mixes easily with water. Stain-free, rot-proof... highly water-resistant!

WELDWOOD®
PLASTIC RESIN GLUE

Pints, Quarts, Gallons

United States Plywood Corporation,
Dept. 120, 55 West 44th St., New York 36, N.Y.

Send me free leaflets on Weldwood Glue, Firzite and Satinlac.

NAME_____

ADDRESS_____

I Turn Worms Into Dollars

[*Continued from page* 78]

"Why not raise worms that bite *fish* and save all the trouble of fishing?"

At the peak of my shipping season, I have one or two packers working in the cellar storeroom. My wife does the bookkeeping and carries on correspondence with the many buyers. When orders start coming in, I find I am shipping from 10,000 to 12,000 worms a day. My biggest week last summer saw 153,000 worms leave the storeroom.

My best customer last year lived in Baldwin, N. Y. The farthest point to which I shipped worms was Long Beach, Calif. In order to make a profit, I had to raise the price of bait to this customer and even then found that I was making a round trip of 55 miles to the nearest airport at a return of only $2 for mileage. I had to give up the account but there's still a ready market not only in California but in many other places that I am so far unable to supply. I have inquiries on my desk right now from Pennsylvania, Rhode Island, Maryland and Washington, D. C.

There is an interesting sidelight to my business. In many places along the Maine coast, striped bass are known to exist but only a few sportsmen fish for them. If ever I need an additional market for worms—which doesn't seem possible at present—I will only have to sell my neighbors on the thrills of striper fishing. I hope my two boys are old enough then to hire out as diggers, for I'm going to need their help! Actually, I'm now selling to less than one-third of the 167 dealers who want to buy worms.

With all this handling, it's pretty obvious that I must hustle to assure fresh worms. My cool, underground cellar is a madhouse of activity when diggers come in to sort and count worms into my large wooden trays.

Rockweed, fresh and washed clean, lies ready in the paper cartons. The worms are laid in quickly; boxes are tied with strong twine. Addressed labels are slapped on. Cartons are loaded into my panel truck for immediate shipment from the railroad station. Worms are sent railway express, except when air service is indicated.

Recently, one of my diggers handed me a cardboard box. "Let's save the short worms and re-stock 'em," he suggested. Though worms seem to be increasing, we've adopted his conservation idea.

In summer, diggers frequently have enough daylight to work on two low tides. This keeps us hopping in the shipping room. A moderately capable digger can uncover three to four thousand bloodworms a tide. Once, diggers used to get as little as 60 cents a hundred for worms.

[*Continued on page* 168]

Don't put in a drop of Anti-freeze

. . . until you've cleaned out rust with

DU PONT Cooling System CLEANSER

It's a safe, easy way to prevent clogged radiators that waste anti-freeze, cause trouble and expense

Now, before freezing weather sets in . . . before you put in anti-freeze . . . it's time to clean out your cooling system. **Du Pont Cleanser** makes the job safe, simple and thorough. You can even let the cleanser work while you're driving. And neutralizer is included in the can for a complete job. Du Pont Cleanser removes all rust—*without reverse flushing*, without fuss. Get an economical can at your service station or auto supply store today.

Insure against leaks that waste anti-freeze with

DU PONT COOLING SYSTEM SEALER

Don't let radiator leaks rob you of anti-freeze. Seal it in with **Du Pont Cooling System Sealer.** Even when the cooling system is apparently water-tight, many permanent anti-freezes will "creep" and be lost by seepage through tiny pinholes. Such leaks are stopped immediately by Du Pont Sealer. It's simple to use, flows with the water and can't clog, or harm hose or metal parts.

DU PONT

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

Hunt HIGH and LOW .. you can't beat REMINGTON POWER plus PATTERN

Send 10¢ in coin to Remington Arms Company, Inc., Dept. M1, Bridgeport 2, Conn., for your copy of the booklet, "How to Dress, Ship and Cook Wild Game."

It's a fact! You *can't* top the smash and reach of Remington "Express" shells ... because they're *loaded to the limit* for power! Can't help but get perfect patterns, because of Remington's exclusive Flat-Top Crimp that licks "blown" patterns forever. And that's not all! Remington gives you *many* features found in no other shotgun shells. For example, *only* Remington shells are corrugated ... for greater strength, for non-slip handling when your fingers are cold and wet. And Remington shells are the *only* shells with world-famous "Kleanbore" priming that can't rust or corrode a gun barrel.

See the difference in your own shooting. Load up with power-packed Remington "Express."

"If It's Remington—It's Right!"

Remington DU PONT

"Express," "Kleanbore" are Reg. U. S. Pat. Off. by Remington Arms Company, Inc., Bridgeport, Conn.

Best Value—Bar None!

DU-FAST*
Oscillating Motion
SANDER & POLISHER

Think of it! — The Du-Fast* Sander and Polisher gives a FULL ½" OSCILLATING MOTION ... BIG 3⅝" x 7" FAST-WORKING SURFACE ... USES INEXPENSIVE STANDARD CUT PAPERS!

IT'S THE WORLD'S FASTEST CUTTING OSCILLATING SANDER!

Yes! — And it attaches in 10 seconds to any Home Utility Black & Decker ¼" Electric Drill ... Light weight for smooth, easy, continuous use without tiring ... powerful for the toughest Sanding and Polishing job!

DU-FAST* is the perfect Sander and Polisher for every home use!

Over 100,000 Satisfied Users!

only **$14.95**

(For Du-Fast* Attachment)

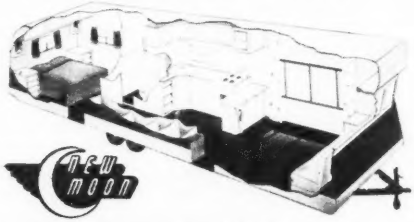
DU-FAST* Oscillating SANDER & POLISHER, powered by Black & Decker Home Utility ¼" Electric Drill.

* PAT APP FOR

MANUFACTURED BY

DU-FAST, INC. 32 East 4th Street New York 3, N. Y.

Your Own Luxurious Home
anywhere you go—at a price you can afford to pay



APARTMENT TRAILERS

One and two bedroom models with big solar living room, fully equipped efficiency kitchen and bathroom with tub and shower. Truly a home you will be proud of ... a home in which you can raise a family. A home you can take anywhere ... where wages are the highest ... where scenery is the most beautiful ... where the climate is ideal. Low down payment ... monthly payments like rent.

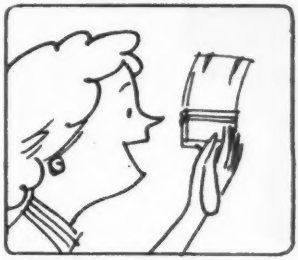
SEND FOR FREE FULL-COLOR BROCHURE

REDMAN TRAILER CO.

903 E. Superior, Alma, Michigan

YOU CAN'T DO A BAD PAINT JOB

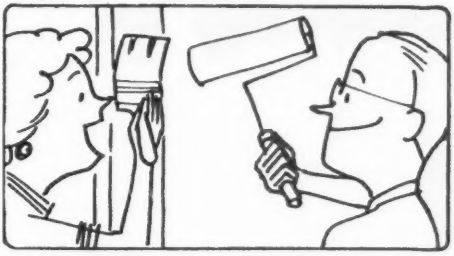
with New Gold Bond Velvet!



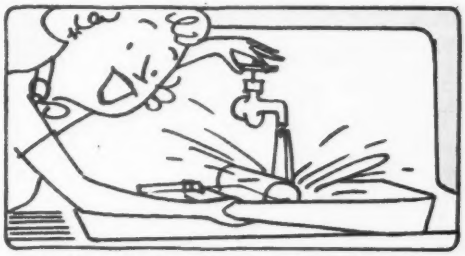
GOLD BOND VELVET is the easiest-going wall paint you ever used! Ready-to-use. No primer needed. Dries in minutes to a velvet smooth surface that won't crack, chip or peel.

FLOWS ON! Just dip your roller or brush in odor-free Gold Bond Velvet and see how it goes on almost by itself! It eliminates what professional painters call "drag."

WITH ORDINARY PAINT you have to guard against lap or brush marks, touch-up spots. No worry with Gold Bond Velvet! This latex-base paint blends perfectly . . . you can't do a bad job!



COVERS WALLS AND WOODWORK, TOO! Use Gold Bond Velvet over paint, plaster, wallboard and even over most wallpaper . . . without an undercoater.



EASY TO CLEAN UP! Brush or roller cleans off with plain water. Spatter or splash marks clean up with a damp cloth. No turpentine needed.

SCRUBABLE! Durable Velvet can be scrubbed year after year without harm. Pencil, crayon, finger marks and food smears wipe right off!

Ask your local Gold Bond paint dealer or lumber and building material dealer to show you the 12 new Velvet colors. The orange and tan label is your assurance of another top quality National Gypsum Company product.

NATIONAL GYPSUM COMPANY • BUFFALO 2, NEW YORK

SOLVE your toughest gluing problems

MIRACLE BLACK MAGIC ADHESIVE®

The rugged heavy-bodied waterproof adhesive which sets without heat or pressure — for permanent bonding of rigid materials; i.e., metal, glass, brick, hard plastics, slate, etc. . . . also to fasten some flexible materials to rigid surfaces; i.e., rubber, felt, canvas, linoleum, etc.

FREE: Interesting, informative Black Magic booklet. Mail letter or card to Department I-10 today!

Replace loose tiles in walls, floors, mantels, etc.

Fasten rubber strips, gaskets, and bumpers on car doors, refrigerators, etc.

Attach furring strips directly to concrete or masonry walls with Miracle Anchor Nails. Just daub Miracle Black Magic Adhesive on back of anchors and stick to wall.

MIRACLE ADHESIVES CORP.
214 E. 53rd St. • New York 22, N. Y.
©By Miracle Adhesives Corp.

Opportunity C.O.D.

[*Continued from page* 163]

ary, 1951, more than 2,130,000 service men and women had enrolled for USAFI correspondence courses, many of which were trade and vocational courses furnished by the nation's private mail-order schools.

America's correspondence schools have produced a glittering array of graduates. Well, maybe a few were not so glittering. Like the Tennessee mountaineer who officials of International Correspondence Schools like to tell about. He was doing right fine in a metal-working course, but suddenly his lessons stopped coming back. Months went by and the school didn't hear from him. Officials checked up and learned that he had a new forwarding address—the state prison.

Soon, a letter arrived from the mountaineer explaining what had happened. It seems he had been arrested as a moonshiner and during the trial, his still was brought into court and carefully examined by the judge and jury.

"They all thought it was the finest copper smelting job they had ever seen," he wound up proudly. "And I told them I owe it all to ICS!" •

I Turn Worms Into Dollars

[*Continued from page* 164]

They now get two cents per bloodworm and $1.40 per 100 for sandworms.

There's money in other aspects of the worm business, too. I know of a Massachusetts sportsman who frequently takes his family to the beaches. They swim, picnic and fish. His three boys bait their hooks with bloodworms, toss them away out into the surf and stick their rod-butts into empty, metal shellcases. Then they shove the spiked ends of their converted rod-holders deep into the sandy beach and go along with their swimming and picnicking. When a reel screams, they run up, grab the rod and beach a bass. At day's end, they sell their catch of stripers, often to the very dealer from whom they bought worms in the morning. They sometimes make eight or ten dollars—bass, a delicious food fish, brings top prices in the market.

With millions of worms in the mud-flats and buyers begging for them, I want to convert as many as possible into dollars. So, when the worm turns down our way, we direct its course toward a savings bank. •

FILL cracks quickly, permanently with

MIRACLE TUB-CAULK

Squeeze bright, white Tub-Caulk right out of the tube like toothpaste. Caulk around sinks, tubs, and showers quickly and neatly. This amazing new product dries within one hour to a tight waterproof seal that won't shrink or crumble. Tub-Caulk keeps its white satin-smooth finish even after repeated use of harsh scouring powders.

FREE: Interesting, informative Tub-Caulk booklet. Mail letter or card to Department M-10 today!

Applies like toothpaste. Stays bright white forever.

Fill in cracks around shower stalls.

Seal cracks between sinks and walls.

MIRACLE ADHESIVES CORP.
214 E. 53rd St. • New York 22, N. Y.
©By Miracle Adhesives Corp.

Spark Plugs that Perform **LIKE THIS** –

178.497 M.P.H. ON WATER

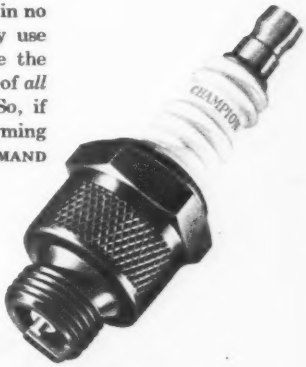
will make **YOUR CAR** Perform *Better!*

"Flying on water" describes the new world's speed record set by Stanley S. Sayres in his Slo-mo-shun IV.

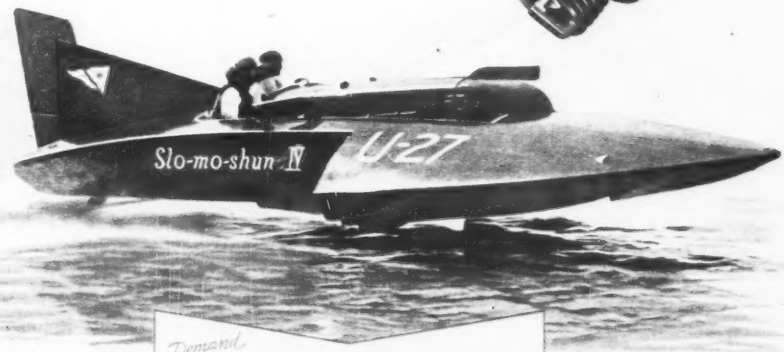
Mr. Sayres wired . . .

"Slo-mo-shun IV continues to be the world's fastest boat . . . set new world's record of 178.497 miles per hour . . . 24 Champion Spark Plugs performed perfectly in her Allison engine . . . thanks for everything and congratulations."

This sensational and extreme test of spark plug performance clearly points the way to the best spark plugs for your car. For it is from such an exceptional test as this that our engineers gain experience and knowledge that can be obtained in no other way. We constantly use such findings—to improve the quality and dependability of *all* Champion Spark Plugs. So, if you want a better performing engine in *your* car, DEMAND CHAMPIONS!



Owner and pilot, Stanley S. Sayres, set the above new world's speed record on Lake Washington, Seattle, on July 7th, hitting 185 m. p. h. on one run!



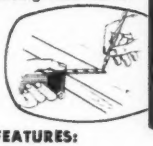
FOLLOW THE EXPERTS *Demand* **CHAMPIONS** FOR YOUR CAR!

Most versatile folding rule—

NEW STANLEY "100 PLUS" EXTENSION RULE No. X226

Make no mistake, the new Stanley "100 Plus" Extension Rule is the handiest, most versatile folding rule you can buy.

Read it four ways — on inside measurements using slide, entire reading is centered at one point — no chance for errors; may also be used as an ordinary extension rule for inside measurements, and as a regular folding rule reading from either end.



Use it as a marking gauge for measurements in 2" and 4" multiples.

CHECK THESE "100 PLUS" RULE FEATURES:

- Easy to read Big Black Numbers on White Sticks.
- Square ends — butt flush with work.
- Opens to even inches at end of each stick.
- Handy for end-to-end measurements — opens in 6" multiples to full length, 72".
- 8-inch Brass slide removable for use as depth gauge.
- New plastic finish wears four times longer.
- Extra Thick Rock Maple Sticks graduated all edges.

For real rule value ask for the X226 at your hardware dealer's. $2.65 each.

STANLEY TOOLS, New Britain, Connecticut

THE TOOL BOX OF THE WORLD

STANLEY

Reg. U.S. Pat. Off.

Hardware • Tools • Electric Tools • Steel Strapping • Steel

P1

TOY PATTERNS — 6 for 25c
Ideal gifts for the youngsters.
Two sets — 6 full-size patterns in each.

P2

SEND TOY PATTERNS NOW!

Stanley Tools, 5102 Elm St., New Britain, Conn.
(In Canada: Stanley Tool Co. of Canada, Ltd., 5102 Stanley St., Roxton Pond, Quebec)

Enclosed is.....**Send Patterns checked**

.....**Patterns P1 (25c)** .....**Patterns P2 (25c)**

Name.....

Address.....

City and State.....

Smiley Burnette

[*Continued from page* 75]

ideas for gadgets used in his motion pictures.

Three of these are the Funnelphone, the Jassackaphone and a special Calliope. They were musical instruments of his own invention, but you couldn't get much music from them. He still has the Funnelphone and the Jassackaphone. But the last time he saw the Calliope it was strapped on a burro's back and the critter was headed for Texas via the Mojave desert.

Smiley's two older children, Stephen, 11, and Linda, 13, seldom pass up the opportunity to use the tools in the woodworking shop and they are as adept as Smiley himself. Smiley has taught them to wrap fishing rods, turn out Indian clubs on the lathe and cut garden decorations, such as Dutch dolls, from plywood with the coping saw.

Many practical items are made in the metal shop. Smiley built a century stand—his third hand—to hold any object he wants to weld or solder. He also spent $3 and constructed a photographic copying machine from scrap.

A brazier—once a huge steel water tank—for roasting frankfurters, was cut with the acetylene torch. And the andirons in his room were manufactured in the little metal shop.

Once, Smiley was intrigued with deep-sea diving and made a complete set of underwater diving gear. After one test, Smiley abandoned the outfit for something more earthy.

"Things began to look back at me," says Smiley. "Who knows what in tarnation them gruesome things was. I ain't been back since."

Probably the biggest item Smiley ever completed was a pontoon boat. It took him three weeks during his spare time to build the craft out of some sheet aluminum and two portable gasoline tanks from an airplane. It is powered by a 10-horsepower motor. Cost? Only $25.

One of the most practical articles he constructed from junk and bomber wheels was his portable cement mixer. He used it to pour and mix concrete for 400 square feet of flagstone around his swimming pool.

Even electrolysis is no enigma to Smiley. He can gold, silver or chrome plate with a professional's perfection and he lengthens the life of his garden tools and barbecue equipment by electroplating.

In the photographic shop, Smiley's children help him print 8 by 10 personalized photos of himself which they send out to disc jockeys throughout the country.

Out of exasperation one night, Smiley solved the problem of groping in the darkness for photographic paper—he went to his metal shop and bent a three foot piece of pipe into a

[*Continued on page* 177]

HOW TO MODERNIZE YOUR KITCHEN—

PUT DOWN **GOLD SEAL®**
LINOLEUM TILE AND
YOUR WORK'S DONE FOR GOOD!

PUT UP **GOLD SEAL**
CONGOWALL® YOURSELF
NOTHING LIKE IT, NOTHING TO IT

It's the right tile to lay over a wood floor! Gold Seal Inlaid Linoleum Tile is *flexible* . . . takes the up-and-down movement of the average wood floor without a strain. Can't snap, chip, or shatter, as brittle tiles do!

Easy installation! These tiles are precision-cut—*true 90-degree squares* . . . practically fit themselves into place. Trim easily with a knife for odd-shape areas. No heating or hack-sawing needed!

Greaseproof to household fats and oils! *Won't* pit, soften, discolor or disintegrate.

Easy to look at . . . easy to walk on! It's quiet, resilient . . . not clattery or tiring. Gold Seal Linoleum Tile comes in 21 beautiful glowing colors, all in *true-square* 9" x 9" tiles. All backed by the Gold Seal money-back guarantee of satisfaction!

Gold Seal Congowall looks, feels and cleans like expensive ceramic tile . . . never needs refinishing, repairing, or repainting.

Yet tough and sturdy as it is, Congowall is flexible, easy to handle. Just paste it up . . . *that's all!* Congowall's patented duplex backing *locks it to the wall* and keeps it there, smooth and tight. That's one of the big reasons why Congowall is up successfully right now in more than 5,000,000 homes!

Sixteen true tile colors . . . plus brand new Ivy and Vine patterns. Congowall costs only about $7 for 10 feet, wainscot-high . . . and the Gold Seal *guarantees* complete satisfaction or your money back!

FREE! Special do-it-yourself decorating booklet . . . 16 pages of full-color pictures, ideas, suggestions . . . easy-does-it hints for *all* rooms. Instruction booklet, too!

CONGOLEUM-NAIRN INC.
KEARNY, N. J.
MAKERS OF GOLD SEAL GUARANTEED FLOOR AND WALL COVERINGS

MAIL COUPON TODAY

Congoleum-Nairn Inc.
Kearny 11, N. J.
Please send me FREE Decorating Booklet and Instructions.

Name_____
Address_____
City_____ Zone_____ State_____

DO IT TODAY! SWITCH TO

MILD

KENTUCKY CLUB

"Look! Another man switched to Kentucky Club—the thoroughbred of pipe tobaccos."

Notice how much better your pipe tastes—how much fresher your mouth feels when you switch to Kentucky Club. Look for the blue tin with the picture of the red-coated rider. Send for free catalog showing fine pipes and how to get them at big savings. Mail Pouch Tobacco Co., Wheeling, West Va. Dept. 89

Watch for these

DANGER SIGNS

of Worn-Out Shock Absorbers

Guaranteed for one year or 15,000 miles

MONROE

Play Safe—Replace With New

MONRO-MATIC

SHOCK ABSORBERS

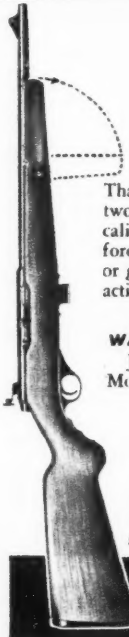
The Only Shocks with Automatic Adjustment

Don't take chances. Check your shock absorbers now and install new MONRO-MATICS if replacements are needed. They give a smoother, safer ride over any road.

EASY TO INSTALL

It takes only a few minutes to install MONRO-MATICS on the average car. Clip this ad and send with your name and address for installation and service manual.

MONROE AUTO EQUIPMENT CO., Dept. A, MONROE, MICH.



22 CALIBER

CARBINES

SMALL PRICE

BIG VALUE

That's the quick story of Mossberg's two fast-handling, 7-shot, 5 lb., 22 caliber carbines. And note hinged forend, which serves as hand grip or ground support. Choice of bolt action repeater or automatic.

YOUR MOSSBERG DEALER WANTS TO SHOW YOU THESE

Just see how much quality Mossberg gives you for so little!

Model #142 (BOLT ACTION) **$23.95**
($24.95 West of Rockies)

Model #152 (AUTOMATIC) **$29.95**
($30.95 West of Rockies)
Both above with peep sight

Model #152K ... *Same prices as #152, but with OPEN SIGHTS*

Send for **FREE** *catalog. No sales at factory.*

O.F. Mossberg & SONS, INC.

28910 St. John St., New Haven 5, Conn.

FUN FOR BOYS FROM 8 TO 80!

DREMEL *Electric* MOTO-SAW

CUTS SCROLLS LIKE MAGIC ...SANDS AS IT SAWS

Only $5.85 with 3 Saw Blades

SAFE AS A HANDSAW!

INDISPENSABLE FOR HOBBY OR WORKSHOP USE

FREE PLANS

Have fun and save money. Make your own Jig-Saw stand. Complete, easy-to-follow plans furnished free with each Moto-Saw—also patterns for making six useful projects.

Here is a tool so *simple*, so *safe* that children can use it for hobby projects . . . women can use it as a handy household tool. Men marvel at its effortless operation, its amazing foot-a-minute cutting speed. Just plug it in any 110-120v A.C. outlet, and a press on the trigger-starter produces positive, fool-proof action. Moto-Saw has only two moving parts, never needs oiling!

No other tool pleases so much for so little cost. Moto-Saw is ideal for intricate work; blade can be adjusted to cut four ways. Sands as it saws through ¾" medium hard wood of any length—saws to the center of 19" widths. See "where to buy" instructions at bottom of this page.

GRINDS • CARVES • DRILLS • ROUTS • ENGRAVES • SHARPENS

DREMEL *Electric* MOTO-TOOL

FASTEST MOST POWERFUL TOOL IN ITS CLASS—APPROX. 27,000 R.P.M. Most practical tool a man can own—more powerful than any similar tool you can buy. Works well in wood, plastics, and metal. For home maintenance jobs you'll wonder how you got along without it. For model making it's a must. And for general shop operations it saves time and money. Compare it, try it, buy it. You be the judge.

Check These Important Features: Oilless sealed bearings • Dynamically balanced armature • Shockproof, Bakelite housing • Dust-filtered air cooling system • Sturdy 110-120 V., A.C.-D.C. motor • Wt. only 13 oz. • A precision tool widely used in industry for many years.

KIT NO. 2—Includes Model 2 Moto-Tool and 23 Accessories (High-Speed Steel Cutters, Grinding Wheels, Polishers). Packed in sturdy hardwood case..... **$23.50**

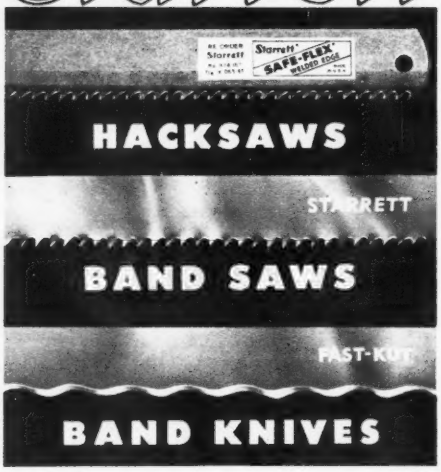
KIT NO. 1—Includes Model 1 Moto-Tool and 34 Accessories (Steel Cutters, Grinding Wheels, Polishers, etc.). Packed in attractive lacquer-finished wood case **$17.50**

MOTO-TOOL NO. 2—Offers more convenience and long life features for the money than any other hand grinder. Thousands of satisfied users. Moto-Tool No. 2 (With 1 emery wheel point)... **$16.50**

SEE YOUR LOCAL DEALER—Dremel Sanders are sold at better dealers everywhere. If your dealer can't supply, order direct on a five-day trial, money-back guarantee. Result in full, and we will ship your sander postpaid. Or, send only $2.00 now, pay postman balance plus postage and C.O.D. fee.

DREMEL MFG. CO. Dept. 142-K **RACINE, WIS.**

Starrett



Whether you cut, saw or slice, you can be sure of peak performance with Starrett blades and bands. The complete line includes all types of hacksaws for hand or power cutting — band saws for cutting metal, wood, plastics, contour cutting, friction sawing, etc. . . and band knives for cutting any soft or fibrous material.

SEND FOR IT — ONLY 10¢
Starrett "Tools and Rules" Book
shows the right tools for any measuring job. 50 pages, 100 pictures, helpful reference tables. Address Dept. MX

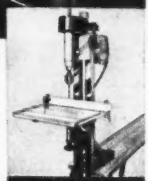
THE L. S. STARRETT COMPANY · ATHOL, MASS., U.S.A.

TRADE MARK Starrett REG. U.S. PAT. OFF. STARRETT TOOLS
Buy THROUGH YOUR INDUSTRIAL DISTRIBUTOR
Prompt delivery · Dependable service · Quality products
SINCE 1880 WORLD'S GREATEST TOOLMAKERS

MECHANICS' HAND MEASURING TOOLS AND PRECISION INSTRUMENTS
DIAL INDICATORS • STEEL TAPES • PRECISION GROUND FLAT STOCK
HACKSAWS, BAND SAWS and BAND KNIVES

FACTORY TO YOU $79.95

SUPERSHOP offers you a precision-built complete power tool workshop. 100% ball bearing. RUGGED. Accurate. Big capacity. 15 day FREE trial. Money back guarantee. Mail postcard for FREE catalog. Buy on easy pay plan.



POWER TOOLS, INC. 640 Yates Avenue Beloit, Wisconsin

GET INTO

SAW SHARPENING

A BIG PROFIT "ONE-MAN BUSINESS"

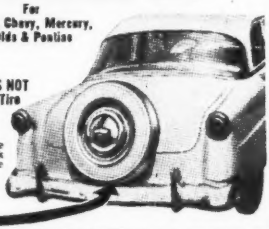
Start Your Own PROFITABLE BUSINESS At Home Full-Spare Time. No Previous Experience Needed. BIG PROFIT, repeat orders come from contractors, hardware stores, carpenters, cabinet shops, home owners, farms—mail orders too! L. Leclerc in New Hampshire says: "Sharpened 7 saws in one hour – made $7.00 cash!" FREE: Write now for BURR'S "Pay-as-you-Profit" Income Plan that shows you how to start small without overhead and grow to full-time saw repair shop with lifetime security. Send no money – just your name and address BURR MFG. CO., 8943-C Venice Blvd., Los Angeles 34, Calif.

CONTINENTAL KIT

For Ford, Chevy, Mercury, Olds & Pontiac

NEW DRESS UP KIT that is FLASHY & RACY

DOES NOT Hold a Tire



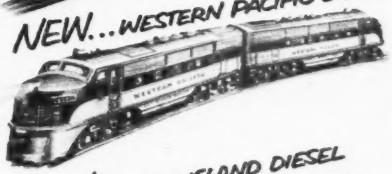
Simple Installation
Gives that exclusive CONTINENTAL look at an inexpensive price. Creates a smart, swanky appearance

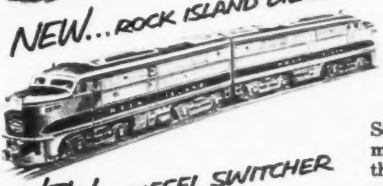
This Kit creates that "Continental Look" at a price you can afford. Gives the impression of being built into the trunk and has that long sweeping appearance. As it does not hold a tire, it eliminates expensive installation. Easy to install. Just remove the Name Plate off Trunk Lid. Easy access to Trunk Handles, and on the 1952 Ford and Mercury to Gas Cap by lifting the Chrome Cap. FITS ON 1949 TO 1952 FORDS, 1952 MERCURY AND CHEVROLET 1949 TO 1952 (EXCEPT STREAMLINE) WITH NO HOLES TO DRILL. ALSO FITS 1949 TO 1952 PONTIAC—ALL MODELS, OLDSMOBILE 1952 MODEL 88 CONVERTIBLE AND HARD TOP, OLDSMOBILE 98, 1952—ALL MODELS. In addition to tire and wheel cover the kit includes chrome cap, chrome license light, license holder and all fittings. Send 25% cash with order. Complete Kit only **$29.50**

Send For Our New Catalog
The World's Largest Auto Accessory and Parts Catalog. Save Money on "Everything Automotive." Over 50,000 Items, including Hollywood Accessories, Hi-Speed Equipment, Rebuilt Engines, all parts and accessories for all cars and trucks. We have that hard-to-get part. Over 100 pages, completely illustrated. Send 25c (refundable).

J. C. WHITNEY & CO.
1917-CH Archer, Chicago 16, Ill.

See All That's NEW in LIONEL TRAINS And ACCESSORIES





See your Lionel Dealer for some of the biggest thrills in your model railroading life. He'll put these new Lionel masterpieces through their paces. See them in action—the newest locomotives, super speedliners and streamliners. In Pullmans, the new astra-domes and observation cars. In accessories, the new operating signal bridge, the new operating switch tower, the new operating barrel loader. See your Lionel dealer soon and see the greatest model railroad show in years.

Special offer below. Extra special in box at right. Enclose correct amount and be sure to write your name and address clearly.

SPECIAL COUPON OFFER!

LIONEL TRAINS, P.O. Box 9, Dept. QQ, N.Y. 48, N.Y.

☐ I enclose 25¢ for catalog offer below—
1. The new 36-page full color Lionel Catalog
2. Rule Book (including signals) for Model Railroaders
3. Model R.R. Town Building Kit—Stores, etc.

OR

☐ I enclose 50¢ for catalog offer above plus engineer's cap →

Name _____

Address _____

City _____ Zone _____ State _____

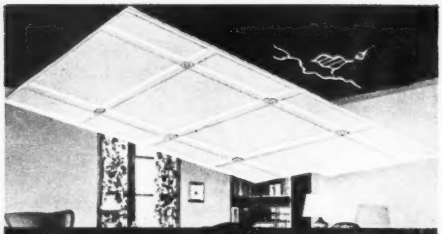
EXTRA-SPECIAL COUPON OFFER!

ALL for 50¢

Official Engineer's Cap in striped denim, plus 5 R.R. insignia emblems to wear on it, together with *Catalog, Rule Book, and Building Kit,* all for only 50¢!

✓ Check cap size here.

Small	Medium	Large



CEILINGS CRACKED? NEED MORE ROOM?

WANT TO *Modernize* YOUR HOME?

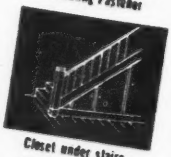
Do the job easily, quickly at low cost with

UPSON PANELS

FOR CRACKED CEILINGS: No messy replastering! No ordeal of housecleaning! Apply Upson Kuver-Krak Panels on furring strips right over cracked plaster! Have a beautiful, crack-proof ceiling in a matter of hours! Unique Floating Fasteners eliminate visible face nailing! Panels are 5 plys thick, laminated for extra strength! Do not "drink" paint, one coat covers!

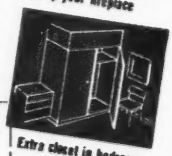
FOR MODERNIZATION: Upson Panels saw like wood. Take screws, nails, fixtures, drilling! Pebbled, tile embossed or smooth surfaces! Hundreds of uses! Most lumber dealers carry Upson Panels in a variety of lengths, widths and thicknesses. All panels trademarked for specific uses. Heavy duty Strong-Bilt for new construction, Kuver-Krak for re-covering cracked ceilings. 3/16" Upson Panels for lighter uses. Use only as directed.

Upson Floating Fastener



Closet under stairs

Beautify your fireplace



Extra closet in bedroom

Your own bar

THE UPSON COMPANY
31110 Upson Point, Lockport, N.Y.

I enclose 10c for 32 page Idea Booklet. Include Instruction Sheet for applying Upson Ceilings and working drawings for Storage Wall FREE.

Name_____

Street_____

City_____

State_____

RESET *LOOSE* HINGES

EASY! Fill old screw holes with Plastic Wood. Let dry and drive screws back in. Plastic Wood holds firmly, lastingly. Handles like putty, hardens into wood.

A CELLULOSE FIBRE FILLER

IN CANS OR TUBES

P.S. Lubricate bikes, trains, skates and wagons with **3-IN-ONE Oil**

BENJAMIN SUPER CO_2 GAS PISTOL

NEW! Different

SAFE—NON-TOXIC—HI-POWER
ACCURATE—ECONOMICAL
CONVENIENT—PRACTICAL

Easy to operate—Uses low cost Soda Cartridges. Shoots Cal. .177 Benjamin H-C Pellets & Darts or BB.
Write Today for Illustrated Folder of All Models Benjamin Air Rifles and Benjamin Air Pistols.

$15.00

BENJAMIN AIR RIFLE CO., 881 Marion St., St. Louis 4, Mo., U.S.A.

ONE-MAN SAWMILL LOW AS $50.00 DOWN

FREE BOOK

Take BELSAW Portable Sawmill right to the trees—turn out valuable lumber for local yards—do "custom sawing" for neighbors. BELSAW lasts a lifetime. No crew needed. Power with old auto engine. Beginners get excellent results. Send postcard for FREE BOOK, "How To Make Lumber."

BELSAW MACHINERY CO.
8347 Field Bldg. Kansas City 2, Mo.

Don't miss
November MECHANIX ILLUSTRATED
Special home building and repair section.

BOYS-IT'S FREE!

... NEW, EXCITING 16-PAGE BOOK on magic and marvels of chemistry

Shows you how to amaze friends with eye-opening tricks of chemical magic . . . like changing water to blood and blood to stone. Tells you how to do many fascinating home experiments and shows you the big, new Chemcraft outfits. Describes fun, thrills, adventure you can have with a Chemcraft chemistry outfit of your own. Send now for free copy to Porter Chemical Co., 21 Prospect Ave., Hagerstown, Md.

Chemcraft Senior Lab.

HEY FELLAS! ask Dad for **CHEMCRAFT**

Smiley Burnette

[*Continued from page 170*]

long Z. Then, he placed one leg of the pipe into a hole that he drilled into the table holding the enlarger. To the other leg he attached a rotating, light-proof box on a discarded phonograph turntable. Now, his printing paper is always handy on the swinging arm of the pipe.

Smiley's recording shop is probably the most important because here he earns much of his livelihood. His radio program, the Smiley Burnette Show, is transcribed over more than 200 American and Canadian stations. In the recording shop, he records the commercials and often the entire programs. He even has facilities to broadcast a program through a direct channel to Los Angeles radio station KFWB.

"I write songs, too," confesses Smiley, "but I can't read music. So, for me to hold a tune, I have to run down to the recording shop and put it on a record." Songs like *Lazy Day, Catfish,* and *Hominy Grits* have paid for Smiley's recording shop.

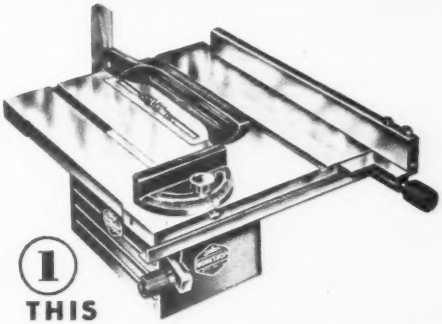
Smiley's six shops represent his six favorite avocations. And he claims he knows 17 trades as a result. In fact, he believes that he could earn a suitable livelihood with any one of them. But as long as Smiley Burnette continues to please a great mass of the American public with his songs and humor, he'll probably never get a chance to prove it. •

Chips • • •

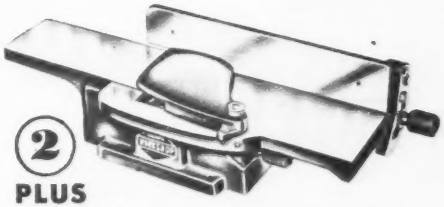
by Jay Work

"I understand it has something to do with the electricity in his body."

GREATEST TOOL TEAM VALUE EVER OFFERED!



1 THIS WORKSHOP 8" SAW



2 PLUS THIS WORKSHOP 4" JOINTER

The 2 Tools Most Men Buy First!

Both for ONLY $52.50!

A good saw and jointer-planer are the tools most men buy first — *because they are the basic tools needed for building household equipment, remodeling and repairing.* Now you can buy both these 2 great tools for the almost unheard of low price of *just $52.50!* This team handles all your straight, angle, and double-angle sawing, plus all edging, truing, and surfacing operations — does them faster, easier, and more accurately than you could ever do them by hand. You'll save money from the start on shelves, cupboards, cabinets, scores of furniture and home repair projects. See these sensational tool values at your dealer's. Or send a postcard for a catalog today!

ATLAS PRESS COMPANY

Atlas 1022 North Pitcher Street, Kalamazoo, Michigan

DEPENDABLE QUALITY TOOLS SINCE 1911

WAR SURPLUS AND OTHER BARGAINS — SAVE UP TO 90%

LOW VOLTAGE CIRCUIT TESTER

Made for U. S. Ordnance Dept. to rigid specification. Portable steel hand-carrying unit is a self-contained trouble shooting device for making a complete and rapid check of the generator battery circuit, incl. any circuit & voltage regulators. Battery voltage, regulators, cut-out settings & generator performance easily determined. It's great for garages, mechanics, truck fleet owners, boat and marine mechanics. Can be used on any 6 or 12 volt system. Approx. Govt. cost $175. NEW. Complete with instruction book, only **$32.50.** Shpg. Wt. 20 lbs.

PORTABLE WELDER

Will weld, braze, solder & cut all metals up to 3/16". No experience needed, full instructions included. Weld iron, steel, brass, aluminum and other metals. Plug into any 110 Volt A.C. or D.C. line. Save 100's of hrs. and lots of $$ doing repair for yourself and others. Great for any mechanic, hobbyist, etc. Not a toy. Comes complete with electrode and carbon holders and an ample supply of electrodes, carbons, flux and necessary components to do a thorough welding job of any type. This ALL NEW unit can't be duplicated for many times its modest price of **$12.00**

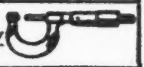
D.C. GENERATORS

Finest aircraft quality . . . heavy duty . . . lifetime grease-sealed ball bearings. Terrific for truck and marine use, for welders, plating, D. C. Appliances, lights, etc.
Type P-1. Mfd. by Ford, General Electric, Westinghouse & Delco-Remy. Rated 200 Amps., 28 Volts, 2500 RPM., can be "tired" up to 300 Amps. Shpg. Wt. 53 lbs. Approx. Govt. Cost $350 . . . New to you.....$21.90

WILLARD WET PLATE BATTERY

Extra-long life, rechargeable battery. 2 V., 20 Amps. Great for portable radios, mobile units, bell circuits, alarm systems, rural telephones, Strobo bulbs, etc. Only 5" high. Visible ball float hydrometer built in Lucite case. Shipped dry (wt. 3½ lbs.) . . . any battery service will supply standard battery electrolyte. Used singly or in multiples. ALL NEW! Now only **$1.95** ea.

MICROMETERS



Chrome plated, precision engineered, carefully tooled to give long life. All new 0-1" capacity—$2.25 ea. 1-2" capacity—$3.50.

MAGNETIC BASE INDICATOR HOLDER

For all types of dial indicators with guaranteed lifetime ALNICO magnets. V-slotted base has a 45 to 50 lbs. pull, permits immediate application without clamps or special attachments and mountings can be made on cylindrical surfaces. For machinists, tool-makers, inspectors. Base 3½" long by 1¼" wide. NEW. Compl. with 3/16" and ⅜" split adapter bushings. **$3.95** ea.

Send 25c for 1952 catalog. Bargains for everyone. Check, Money Order or Cash. 25% deposit on C.O.D. orders. Prices F.O.B. Culver City, Calif., unless otherwise stated.

AIRBORNE SALES CO., INC. Dept. M1 1052
8501 Stellar Dr. Culver City, Calif.

FINE TOOLS NEED FINE OIL!

• Lubricates • Prevents Rust
• Cleans • Polishes

SOLD EVERYWHERE

3-IN-ONE Oil

4 TOOLS IN 1 — METAL WORK SHOP FOR HOME AND PLANT

Patent No. 2053309

IT FORMS SHEARS PUNCHES RIVETS

INTRODUCTORY PRICE Only **$6.95** DELIVERED

Ideal for hobbyists, craftsmen, repair shops, garages, model mfgrs., experimental labs, etc. Handles metals up to ¼" thickness depending upon hardness. Shipped complete with ⅛", 3/16" and ¼" punches and riveting dies. Check or money order must accompany order. No C.O.D.'s. Money will be refunded if not fully satisfied.

ALBERT J. TATU CO.
85 Columbia Dr. Dept. H2 Williamsville 21, N. Y.

CASH IN YOUR SPARE TIME!

BIG MONEY IN OWN BUSINESS

YOU CAN MAKE UP TO $40 a DAY sharpening and setting circular saws for factories, builders, lumber yards—with NEW BELSAW COMPLETE CIRCULAR SAW SHOP. **Low Cost, only $15 down,** sharpens 4 to 5 saws an hour. *No experience needed!* Instructions Furnished. Send Postcard Today for FREE BOOK. ▶

LIFE-TIME SECURITY YOUR OWN BUSINESS

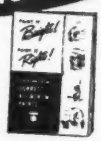
BELSAW MACHINERY CO. 3607 Field Bldg. Kansas City 2, Mo.

Print Your Own

Cards, Stationery, Advertising, labels, circulars, photo and movie titles, church work, tags, etc. Save money. Sold direct from factory only. Raised printing like engraving, too. **Print for Others. Good Profit. Have a home print shop.** Easy rules supplied. Pays for itself in a short time. Write for free catalog of outfits and all details.

KELSEY PRESSES, S-9, Meriden, Conn.

SAVE MONEY-ON PAINTING



FREE BOOK TELLS how to get better paint results at no extra cost. Given free by America's leading aluminum producer so you can get full value and satisfaction from aluminum paint. Written by experts . . . packed with facts . . . write for "Paint it Bright."

Aluminum Company of America, 1719K Gulf Bldg., Pittsburgh 19, Pa.

Love that Quick-Wedge —I use it instead of a conventional screwdriver!

Quick-Wedge SCREW-HOLDING SCREWDRIVER

unconditionally guaranteed

ASK FOR IT AT YOUR DEALER

KEDMAN CO. • 233 SO. 5th WEST • SALT LAKE CITY 1, UTAH

The '52 Hudson Hornet

[*Continued from page* 83]

literally beat the brains out of this Hornet until it was as loose as the morals around the Place Pigalle. I am giving you this background in fairness to explain why the car went rear-endless before my tests were over.

I racked up about 200 miles of high-speed driving around the famous Le Mans course during informal practice sessions before the big race. I found that I was getting down the straight at around 107 mph, which is fast, but the real pay-off came in the turns. The Hornet stayed right in there with some of the practicing race cars on the corners and was actually faster than some of them in getting out! I took the famous S-bend at Whitehouse corner at open throttle and had no trouble in staying on the tail of a Lancia Aurelia that was to race a few days later.

This is America's best road car by far, in spite of its Queen Mary width which I for one could do without. As I reported several years ago, the windshield is so far forward from the driver's eyes that you get the feeling you are always coming out of a tunnel. This and a few silly blotches of chrome are all the bad points I could dig up. Actually, the Hudson is one of the finest automobiles built in America, regardless of price. It will match any American car in comfort, roominess and general appointments. If you like 'em big and tough, here's your dish. The factory hop-up equipment and export suspension take nothing away from the car in functional performance and raise it up to the last notch on the hit parade pole.

The standard Hudson Hornet, with nothing added, is quite a hot babe but nothing too unusual. Top speed is between 96 and 97 and zero to 60 goes just a hair under 15 seconds, actually 14.7 average. The Teaguemobile I tested had a top of approximately 107 and did the zero to 60 in 12.1 seconds. The zero to 60 test was the only one I could make because on my next test the rear axle gave way like a bomb, creating quite a nasty situation. A real silly French law states that you can no longer import American cars for sale. In fact, you can't even import spare parts. The Hudson dealer in Paris was unable to help us get a new axle. By a stroke of luck, Charlie Moran's wife who was flying over to see him drive a Ferrari in the race, hadn't left New York yet and a phone call brought a rear-axle assembly over on the plane as part of her personal luggage. But it was then too late for me to complete the acceleration runs.

In summing up, once around the park is all any average driver needs to find out why the Hudsons are the top dogs in stock car racing. Personally, I think they are great. •

World's Most Complete!

1953 ALLIED

TV & RADIO CATALOG

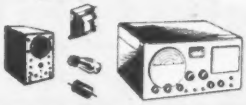
FREE!

Everything in TV & Radio At Lowest Prices

236 PAGES VALUE-PACKED

Everything for Experimenters, Builders, Amateurs, Servicemen, Engineers, Soundmen

Send for ALLIED's big 236-page 1953 Catalog, the value-packed guide to *everything* in TV and Radio! Latest home radios, TV equipment, Amateur supplies, High-Fidelity Sound, P.A. Systems, new recorders, test instruments, builders' kits—plus the world's largest stocks of electronic parts, tubes, tools and books. Get more for your money—send today for your FREE 1953 ALLIED Catalog!



SEND FOR FREE CATALOG

ALLIED RADIO

ALLIED RADIO CORP., Dept. 6-KK-2
833 W. Jackson Blvd., Chicago 7, Illinois

☐ Rush FREE 1953 ALLIED 236-Page Catalog.

*Name*_____

*Address*_____

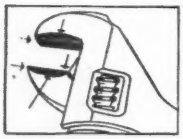
*City*_____ *Zone*____ *State*_____

LOOK FOR THE NAME **UTICA**

IT MEANS

INDUCTION HARDENED WRENCH JAWS

Ordinary adjustable wrenches, subject to hard usage, burr over at the jaw edges. UTICA's process hardens the jaws in just these *vital* areas (indicated by arrows). Tests show that UTICA's last up to 10 times as long as ordinary adjustable wrenches.



Dark areas are induction hardened for longer wear.

Your hardware dealer has UTICA adjustable wrenches or can get them for you. Insist on UTICA — the longer lasting adjustable wrench.

UTICA
DROP FORGE AND TOOL CORPORATION
UTICA, N. Y. NEW YORK

IT PAYS TO BUY QUALITY TOOLS
and the world's best tools are made in U.S.A.

SAVE 50% - THOUSANDS HAVE ASSEMBLED

$42 UP PACKAGED BOAT KITS

27 MODELS

Dinghies, skiffs, racers, inboards, outboards and cruisers. Assemble your own boat, it's easy, it's fun! All parts pre-cut or prefabricated from finest materials. Get all the facts from our big 24 page catalog. See how Packaged Boats are built, how they perform, how exclusive construction features make assembly easy. Includes specifications, performance data plus hardware and paints.

SEND 25¢ for NEW 24 PAGE CATALOG

CUSTOM-CRAFT - DEPT. 9 - BUFFALO 7, N. Y.

BOAT PLANS PATTERNS

▶ Over 50 modern plans and full size patterns. Racing classes, cruisers, inboards, outboards, sail boats. By famous designers. 6' to 30'. DESIGN CATALOG 35¢. Design Catalog and boat building handbook, $1.00

MARINE MART - DEPT. 9 - BUFFALO 7, N. Y.

NOW—40 different CUTS with AMAZING, NEW Warren DADO SAWING WASHERS On Your Saw Blade

Just dial widths to cut parallel grooves perfectly smooth. No warp, vibration or trick screws. Strengthens blade, perfect balance. GUARANTEED! At your dealer's or order direct. Give arbor size—½", ⅜", ¾", 1".

ONLY $4.95 PER SET

WARREN WASHERS COMPANY
DEPT. 230, BOX 98 NORTH END STATION, DETROIT, MICH.

RED DEVIL TOOLS, IRVINGTON 11, N. J., U. S. A.

SEND FOR GIANT 1952 BOOK ON ELECTRIC TRAINS—

Huge, 48 page catalog filled with full-color pictures of American Flyer Trains and accessories. Authentic scale models, superbly detailed, with 2-rail track, smoke and "choo-choo." Wide variety of remote-control, action-packed equipment. Send 10c to Gilbert Hall of Science, 303 Erector Square, New Haven, Conn.

Building a home? Be sure to read November MECHANIX ILLUSTRATED

x-acto®

HOBBY KNIVES and TOOLS

SEND 15¢ TO COVER POSTAGE FOR NEW ILLUSTRATED 28-pg. CATALOG
X-ACTO CRESCENT PRODUCTS CO. INC., 440 FOURTH AVE., N. Y. 16, N. Y.

ELMER'S a Mr. Fix-it!

It's amazing what this wonderful white glue can do on: *furniture, wood, paper, fabric, pottery, leather, linoleum, etc.* ELMER'S *Glue-All* is **white magic** for strong, invisible gluing. Dries in a jiffy! Wonderful for kids because it washes *off* hands and clothing instantly. Non-staining and so easy and pleasant to work with. Get a trial-size bottle of ELMER'S *Glue-All* today—another *Borden's* product that belongs in your home.

If it's Borden's, it's GOT to be good

Guaranteed by Good Housekeeping

ELMER'S GLUE-ALL

Borden's

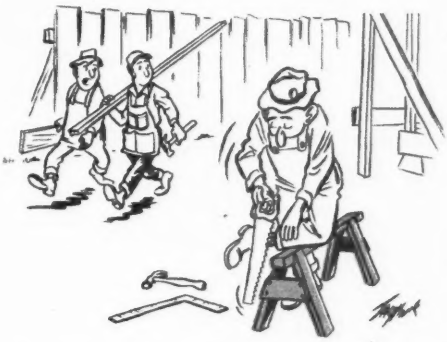
The Sunbeam-Talbot

[*Continued from page* 87]

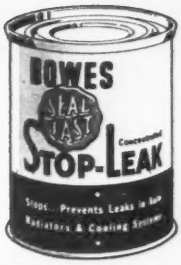
but continuous gear-changing and high rpm's will soon get any engine to the boiling point. On some of the Alp passes, I have driven over 15 or 20 miles of steady pulling and here the easy-working, big-charge engine pays off.

On the highway for high-speed runs, I found the Sunbeam-Talbot a little wobbly. I checked the tire pressure, which was up to specifications, but the wandering tendency stayed with me on all long runs. Unlike many imports, this job had a real American sponginess I didn't like. When I made my rough-road test I soon found out why. This is one of the best semi-small-shock-absorber cars I have ever driven. Over miles of gouged-out roads, Bill Parker and I hit every rut without the slightest discomfort. This is a true Junior balloon car and would warm the heart of the tender-bottom clan. This fine shock absorber performance is partially the reason for the road wander. In order to have a car that will go down the highway at speeds with the accuracy of a Springfield rifle, it must be built slightly on the stiff side.

In summing up, I think that with certain reservations the Sunbeam-Talbot is a swell car. It's not very fast and it's not very big but it is loaded with quality and has many deluxe features, such as the three-way adjustable seats, the sliding roof and magnificent leather upholstery. Sportsman Thorne Donnelly is one of the best ads Sunbeam ever had. He owns the special Cadillac we wrote up some time ago, an Aston-Martin and, until lately, a Porsche. He has owned a $20,000 Mercedes and a dozen other glamor barges and unquestionably qualifies as a real connoisseur of fine cars. The last time I saw him in Palm Beach he was driving a Sunbeam-Talbot sedan and was raving about it. •



"I see Willoughby has finally decided to make something of himself."



SAVE MONEY AND TROUBLE WITH—

BOWES SEAL FAST

STOP-LEAK

Come winter you will have to buy some sort of anti-freeze for your car, or else you won't "run." Anti-freeze is expensive. If your radiator or any part of your cooling system is leaking, you will quickly lose your expensive anti-freeze. Put a can of BOWES STOP LEAK in your radiator today and make sure that you will have "*smoother motoring*" this winter.

BOWES Stop Leak will not clog your radiator. It's SURE . . . SAFE . . . PERMANENT.

YOUR CAR DESERVES THE WINTER SAFETY OF

BOWES RADIATOR CHEMICALS

RADIATOR KLEN-ZUR
Removes rust, scale, lime, oil and grease . . . contains no harmful acid . . . gets cooling system clean as new.

RADIATOR RUST-ROUT
Prevents trouble-making rust accumulation in cooling system . . . also lubricates water pump.

DRIVE IN Where You See This Emblem...

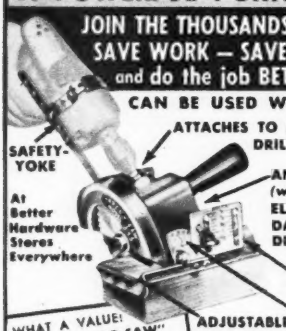
BOWES SEAL FAST

BOWES "SEAL FAST" CORP., INDIANAPOLIS 7, IND.

EVERY ELECTRIC DRILL A POWERFUL PORTABLE SAW

JOIN THE THOUSANDS who SAVE WORK — SAVE TIME and do the job BETTER with "ARCO SAW"

CAN BE USED WITH ONE HAND



WHAT A VALUE!
No. 445 "ARCO-SAW" (shown) 11.50 with ALL GAGES & 4" "HYCARBON" Cross-cut Blade.
No. 444 "ARCO-SAW"—same as above, less gages. Has accurate visual guide 9.95

Also has VISUAL GUIDE (not shown).

CUTS 1¼", or 2x4 by turning over

90-DAY FACTORY GUARANTEE

READ WHAT ENTHUSIASTIC "ARCO-SAW" USERS SAY:

Best of all my tools. H.D., Wauwatosa, Wisc.
...a wonderful time saver...very simple to operate. N.H., L.I., N.Y.
...haven't used a handsaw since I purchased the "ARCO-SAW". D.S., West Roxbury, Mass.

If not available at your dealer, TRY "ARCO-SAW" on our FREE 10-DAY NO RISK GUARANTEE. If you are not completely satisfied, simply return "ARCO-SAW" for a full refund.

GET "ARCO-SAW" TODAY at your dealer or send us check or M.O. (Postpaid). C.O.D.'s — postage extra. Write for literature of other tools.

DEALERS: Write for nearest wholesaler.

ARROW METAL PRODUCTS CO.

DEPT. MI-10. 140 WEST BROADWAY, NEW YORK 13, N. Y.

GLUE IT RIGHT WITH ROGERS

SAVES MONEY - RESTORES HOUSEHOLD NECESSITIES

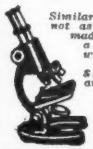
Send 15c for full-sized jar of famous Rogers Glue. Fix broken furniture solidly and easily. Project Plans for building useful things with wood included free. Rogers Glue is easier to work — makes a joint stronger than wood itself. Take advantage of this special offer — Send your 15c to Rogers Isinglass & Glue Co., Gloucester, Mass. today. Ask for Rogers Glue at your local hardware store.

"A Ton of Strength in Every Drop"

ROGERS the best LIQUID FISH GLUE

GLOUCESTER, MASS.

NEVER BEFORE AT THIS LOW PRICE

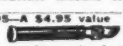


Similar units not as well made sell anywhere at $14.95 and up!

TRIPLE REVOLVING 100X — 200X — 300X MICROSCOPE $9.95

A microscope suitable for students, schools, hobbyists. All metal construction, left and right hand focusing, body tilt adjustment, adjustable plane substage mirror, 3 objectives on turret, instantly making possible desired magnification. *Comes complete with one specimen and wooden box.* Your friends will guess you invested 5 times the moderate amount of $9.95! *Shipping Cost 85c.*

20X—40X—60X POCKET MICROSCOPE $1.95—A $4.95 value



Precision ground optics make this adjustable microscope indispensable for field use. Helps you examine minerals, gems, insects, etchings—in fact you'll be able to find a million uses for this instrument. Select power you want, then turn knurled knob until you obtain pinpoint focus. Sells elsewhere for up to 150% more!

DEVELOPIX, Dept. MI, 35 Maiden Lane, N. Y. 38, N. Y.

Build your own JET ENGINE!

Order these plans today

1. JET PROPELLED BICYCLE. Assemble your own. Photo and instructions $1.00.
2. HOW TO MAKE EXPERIMENTAL JET ENGINES. Seven sheets drawings with information and instructions $2.95.
3. BOTH OF ABOVE in one order $3.75.

SEND NO MONEY. Order both at once $3.75 C.O.D. in USA plus c.o.d. postage. Send check or Money Order and we pay postage. Get other information too. Rush Order.

J. HOUSTON MAUPIN, Dept. 88, Tipp City, Ohio

WANT TO SAVE GAS? ½ MILLION NOW USE GANES

AMAZING GANE NEEDLE | TRY ONE FREE IN YOUR CAR!

TRY BEFORE YOU BUY!

MANY GANE NEEDLE USERS REPORT UP to 25% more mileage, faster pickup, easier starting and smoother idling.

NOW TEST A GANE NEEDLE IN YOUR CAR for ten days, then compare your mileage and performance. If satisfied, send $1.50 per needle (8 cyl. cars take 2). If not satisfied, just return it—fair enough? Since authorities differ on its merits and some users report no improvement, TRY BEFORE YOU BUY! (Gane Needle replaces idling adjustment screw in carburetors—easily installed in a few minutes.)

FREE Auto Economy Manual

Tells how to save gas, tires, brakes, etc. Also introduces many new economy products. (Sent absolutely free to all who try Gane Needles.)

WRITE TODAY. ENCLOSE NO MONEY. PAY POSTMAN NOTHING. Just send us your name, address, and make and year of car.

NATIONAL AUTOMOTIVE RETAIL CORP., Dept. K-10
350 West Washington Blvd. Venice, Calif.

NOW! FILE YOUR OWN SAWS

Go expert saw filing at home. Precision filing easy without experience. Two simple adjustments. Keeps any hand saw extra sharp and true-cutting. Complete with file. Money back guarantee. Cash with order, prepaid. (COD postage extra.) Order today. $2.95.

ANOTHER SPEEDCOR TOOL

THE SPEED CORP. MI-10

512 N.E. 73 Ave., Portland 16, Oregon

HOBART "all 'round" WELDING...gets BIG PAYING jobs!

Go anywhere with trailer type gas drive welder

Don't let opportunity pass you by! Set up your own welding shop—get in on one of today's fastest growing, biggest paying businesses. Opportunities are unlimited.

Have your own BIG PAYING business

Hobart "simplified" welding makes learning easy, yet gives you an all 'round welder of top performance and dependability. Write for free booklet "Better Welds."

Build a GOOD business reputation with

Write today! HOBART BROTHERS CO., BOX SM-102, TROY, OHIO

HOBART WELDERS

On The Trail Of The Rail

[*Continued from page* 92]

had thrown themselves flat in the boats until the shooting was over, then refused to pole their shooters further.

Each of the injured parties had a dozen or so No. 10 shot removed from his neck and shoulders later in the day, but the next morning found them back on the marsh. Over a demijohn of illegal but tasty applejack that night, they had sipped the glass of peace.

There are several sub-species of rail, or gallinule as they are termed in some areas, including the Virginia Rail, Clapper Rail, King Rail and Carolina Rail. The Clapper is slightly larger than the Carolina or Virginia and usually is found on tidal flats in coastal bays and marshes. During the perogee tide of early fall which floods the flats, these birds are driven to the higher flats where their concentration permits unusually good shooting.

For this hunting a spaniel is a definite asset, for the dog can move along 15 or 20 feet ahead of the shooter and flush the birds. This is one form of shooting where a good retriever is literally worth his weight in gold. Without one most of the birds are certain to be lost.

For the shooter with a youngster who has not had much experience in wing shooting, the rail offers a real opportunity since nothing so quickly develops interest as success, and the novice shooter usually can gather in a limit of rail during a tide. As the limit is fairly liberal, usually a dozen birds, the beginner receives both encouragement and experience.

Also, even the boat shooting offers an exceptional opportunity to train a retriever and find good sport at the same time. The majority of the rail retrieves must be made by scent and the dog is also given training in voice and arm signals.

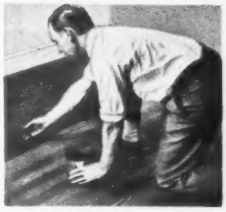
The big-bore gun is not necessary for this shooting and most rail shooters prefer the .410, 28 or 20 gauge doubles. In recent years the skeet load has been preferred but only because few manufacturers now turn out the squib or short-range loads. This has led many shooters to do their own reloading, using a reduced charge of powder and a normal load of No. 10 shot. The shooting is seldom at a range of more than 30 yards and most of it is between 15 and 25 yards. Often it is necessary to wait out a shot, for a bird that flushes close would be torn to shreds by too close a shot charge.

It is quite difficult to find guides or pushers with the necessary equipment on many of the good rail flats, which may be another reason for the decline of interest in the sport. However, few shooters who have tried the shooting

[*Continued on page* 189]

Pointers for Home Painters Floors:

Remove wax and polish by washing floor with turpentine. Wipe dry. Unless this is done, finish coats may not dry or stick properly.



Paint in areas about four feet square. Start in far corner and work toward door. For best results use wide nylon-bristled brush—one designed for the job.

On open-grained floors, brush wood filler into pores. Rub across grain with burlap to remove excess. Let dry. Sand lightly with grain. Clean with cloth moistened with turpentine.

To store brushes for long periods, clean thoroughly and wrap securely in manner shown here. Brushes stay in better condition when they're kept in good shape.

JOB AFTER JOB, you'll get best results with a well-tipped nylon paint brush. Durable Du Pont nylon bristles paint smoother . . . are clean and sanitary . . . never get brittle . . . don't break off even under the roughest treatment. And nylon bristles last from 3 to 5 times longer than ordinary bristles. Leading manufacturers make nylon paint brushes in all types and sizes. Look for the name NYLON on the handle. Be sure to pick the size brush designed for the job . . . and demand Du Pont nylon bristles.

150th Anniversary

DU PONT
REG. U.S. PAT. OFF.

Better Things for Better Living
. . . through Chemistry

The best brushes have
DU PONT NYLON BRISTLES

STOP FURNACE LEAKS
Save Fuel Costs

Seal up every heat-wasting crack, opened seam and other leak in your furnace, boiler, tank, radiators and piping *tight* —as professional repair men do—with Smooth-On No. 1 Iron Cement. Do it yourself—now—and cut this winter's fuel bills. You apply Smooth-On like putty, it hardens like metal, and *stays* tight, because it expands slightly as it sets. Buy Smooth-On No. 1 in 1¾-oz., 7-oz., 1-lb., or larger sizes at your hardware store. If they haven't it, write us.

FREE Repair Handbook

40 pages of ingenious, tested, short-cut repairs. Simple directions. 170 illustrations. Write today for YOUR free copy of the Smooth-On Handbook.

SMOOTH-ON MFG. CO., DEPT. 69K
576 Communipaw Ave., Jersey City 4, N. J.

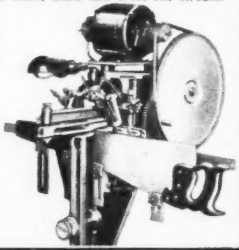
Do it with
SMOOTH-ON
THE IRON REPAIR CEMENT OF MANY USES

Make
$20 to $30 a Week EXTRA MONEY!

With the high prices of food, clothing, etc., just think what you could do with extra money! Turn your spare time into CASH—sharpening saws with a Foley Automatic Saw Filer pays up to $3 or $4 an hour. Start at home—no experience necessary. "The first saw I sharpened with my Foley Filer came out 100%"—writes Clarence E. Parsons. No Canvassing—"I advertised in our local paper and got in 93 saws"—says M. L. Thompson. With a Foley you can file all hand, band and cross-cut circular saws.

FREE BOOK
Shows How to Start

It explains how you can get business from home owners, farmers, carpenters, schools, factories, etc. "I get work from 20 and 30 miles away"—says Charles H. Smith. Free Book "MONEY MAKING FACTS" tells just how to start. Send coupon today—no salesman will call.



Send Coupon for **FREE BOOK**

Foley Mfg. Co., 1015-2 Foley Bldg., Minneapolis 18, Minn
Send Free Book—"MONEY MAKING FACTS"

Name .....

Address .....

20 POWER! WHISPER WEIGHT 7½ OUNCES

2½ Times stronger than binoculars
used officially by the U. S. Armed forces! COATED!

"Whisper Weight!" Easy to hold—Easy to focus. Ideal for indoors, outdoor sports, vacationing, trips, long distance spotting. Pocket size—measures only 6¼" closed, 13½" open. NOT A CHEAPLY MADE TOY TELESCOPE! But an all metal precision machined (threaded fittings throughout) precision ground achromatic telescope that invites comparison. Bears the famous UNITED "Seal of Quality" because Now you can view distant objects (even those miles away) clearer, brighter and in sharper detail than ever before. UNCONDITIONALLY GUARANTEED. Try for 30 days. If not absolutely satisfied in every way return for an immediate unquestioned refund of your money. Introductory price $8.95 (tax free)! Cash orders postpaid. C. O. D.'s include $2.00 deposit.

$8.95 no tax

UNITED BINOCULAR CO.
9043 S. Western Ave. Dept. ARF-873 Chicago, 20

BUILD AN ARC WELDER FROM OLD GENERATOR
WE SHOW YOU HOW
Light or Heavy Work

Produces 75-200 amperes. Takes no previous experience or hard work to make one of these welders. Complete plans 35c. Send for your **PLANS** today and we'll include FREE our Big NEW Catalog listing hundreds of electrical bargains.

LEJAY MFG. 1314 LEJAY BLDG. MINNEAPOLIS, MINN.

TRANSFORMER WELDER $18.95 FOB QUINCY

Complete with everything. Ready to plug in. 110 volts A.C., 15-30 amps. 3 heats. Welds metal from 1/16" to ¼" using 1/16" to 3/32" standard rods. Guaranteed unconditionally. 10-day trial. No C.O.D. We also make welder for 16-22 gauge metal, $3.95; ¼" metal $6.45.

ESSAY MFG. CO., INC., Dept. 00, Quincy 69, Mass.

1½" F:3.2 TELEPHOTO LENS $9.95 *post-paid*
for 8mm Revere, Keystone, DeJur, etc.

Nothing like this excellent imported lens is available at less than 2½ times as much! Four elements, coated and color corrected assure definition equal to that produced by most expensive 'brand' lenses. Satin finish mount for neat appearance. Fits turret and non-turret Revere, Keystone, DeJur, Perfex, Franklin and Kodak Reliant cameras, is as simple to use as your normal lens, yet brings object three times as close, is indispensable for distance shots. *Leather case 75c.*

NEW: 7mm f:2.5 coated wideangle lens, fits most 8mm cameras, easily worth $40.00. **$19.95**

Cash orders postpaid. Include $2. deposit with C.O.D.'s

SPIRATONE, Dept. MI, 49 W. 27 St., New York 1, N. Y.

DYNAMIC POWER TOOL COMBINATION

INCLUDES: Cummins ¼" Electric Drill; Cummins Saw Attachment; Combination Saw Blade; Set of Drills; Lambs Wool Bonnet; 6 Sanding Disks; Steel Arbor and Attachments; Cloth Buffing Wheels; Grinding Wheel; Wire Wheel Brush; Steel Paint Mixer; Steel Bench Stand; Portable Steel Carrying Case.

Price of Dynamic Power Tool Combination complete is $26.95

SHIPPED ON APPROVAL
NO MONEY WITH ORDER—NO C.O.D.

Try it ten days before you buy. If completely satisfied then send $2.95 and pay balance at rate of $4.00 per month for 6 months—No Interest or Carrying Charges Added. If not completely satisfied, return to us, no explanation necessary.

KAPNER HARDWARE, INC.
Dept. A50, 2248 Second Ave., N. Y. 29, N. Y.

Amazing Tests Prove

SYNCRO SANDERS DO MORE WORK PER SQUARE INCH OF SANDING PAD SURFACE THAN SANDERS COSTING TWICE AS MUCH

and

No. 504

$19.95

In material removal tests for portable electric sanders conducted in the Syncro laboratory—as most of the leading, medium priced sanders on the market today—it was proven conclusively that sanders manufactured by Syncro Corporation remove more material per square inch of sanding pad surface than sanders costing more than twice as much. This is your proof that Syncro Sanders are your best buy.

Syncro Power Units are guaranteed against burn out all during ownership or replaced Free! Platen or paper carrier is designed to do ALL finish sanding . . . not just large flat surfaces. The light weight of the Syncro Sander makes it ideal, and much less tiresome for vertical sanding use. Perfect for smoothing seams on dry walls. NOT an orbital *type sander*. Buy Syncro at hardware or postpaid, complete $19.95.

No. 504-D in METAL CASE

Sturdy 9"x5" metal case holds "504-D", 10 sandpapers, polish pads, cord. At hardwares or postpaid $22.95

QUALITY SANDERS By

SYNCRO

CORPORATION

DEPT. W-102, OXFORD - MICHIGAN, USA.

AIR LIFT

PROTECT YOUR CAR

WITH

The Sensational Pneumatic Spring Booster

- For Overloads
- For Improved Roadability
- For Trailer Hauling
- For Sagging Springs

ECONOMICAL AND EASILY INSTALLED

Inflates with Air — Same as a Tire

Thousands in Use — Guaranteed

GIVE YOUR CAR A LIFT — WITH AIR LIFT

See Your Dealer or Write

AIR LIFT CO.

2330 W. MAIN STREET

LANSING, MICHIGAN

CAR HARD TO START?

Get EASY STARTING ... Smoother Engine Performance ... Save Gas! with SENSATIONAL NEW

SISSON *Electrimatic* **CHOKE**

Positive, dependable *electric choking* gives *quick, easy starts* every time in any weather. Smoother warm-up . . . no stalling ...no flooding...no seasonal adjustment! Fits any car equipped for automatic choking. $5 complete.

INSTALL IT YOURSELF Get FREE Illustrated Folder

Sisson Choke, 1656 Ohio Avenue
Anderson, Indiana

☐ Please send me FREE illustrated Electrimatic folder

☐ I enclose $5 (check or money order) for one Sisson Electrimatic Choke with complete instructions

Car Make_____ Year_____ Cyl._____

Carburetor Make_____

Name_____

Address_____

City_____ Zone____ State_____

The thousands upon thousands of men who use precision tools will tell you that there are none better than Lufkin. For measurements that are accurate use Lufkin precision tools. See the complete line of Lufkin tapes, rules, and precision tools at your hardware or tool store.

191

BUY LUFKIN TAPES • RULES • PRECISION TOOLS at your hardware or tool store

THE LUFKIN RULE CO., SAGINAW, MICHIGAN
132-138 Lafayette St., New York City • Barrie, Ont.

THE LUFKIN RULE CO., Dept. MI, Saginaw, Michigan
Please send me the fascinating booklet, "The Amazing Story of Measurement." Enclosed find 10¢ (no stamps) to cover handling and mailing.

NAME _____

ADDRESS _____

CITY _____ STATE _____

the ORIGINAL! WHIZ SAW

The All Purpose Cutting Tool

Precision Made for Precision Work

Home craftsmen will find Whiz Saw useful for rough cutting jobs as well as precision work. ACCEPT NO SUBSTITUTE . . . the original WHIZ SAW is one of the most versatile cutting tools ever invented. It cuts with amazing speed wood, bone, plastic fibre, pressed wood, hard rubber, etc. up to 1" thicknesses . . . it's scientifically designed for cutting inside shapes without first boring a starting hole. Ideal for jig or band saw use when inserted in handy WHIZ SAW table.

Whiz Saw #2 has greater capacity, cuts up to 2" thickness, $130.00. Whirl Saw, a 4½" circular blade, cuts up to 1¾" thickness, $49.00.

If not available at your dealers, write to: The Forsberg Mfg. Co., Bridgeport, Conn. U.S.A.

WHIZ-SAW $5500 Table $18.95

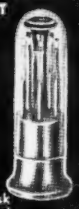
7 saws in 1
JIG, CROSSCUT, KEYHOLE, COPING, SCROLL, BAND OR JIG

the ideal cutting tool for:
HOBBYISTS
ELECTRICIANS
CARPENTERS
PLUMBERS
SIGN-MAKERS
MAINTENANCE MEN

All-metal Whiz-Saw table may be secured with screws to wood bench or held in vise.

ANOTHER Forsberg PRODUCT
Makers of the Famous Whale & Viking Tools

YOU NEED A Moody Kit
PRECISION SMALL TOOL SET



Regardless of your trade or hobby, you need a Moody Kit for their precision interchangeable small tools. Just perfect for

- Cameras—Guns—Fishing Reels
- Radio—T.V.—Electronics
- Model Trains—Boats—Airplanes
- Sewing Machines—Eyeglasses
- Carburetors—Compass adjusting
- Electric razors and appliances

SC-5 Kit (3 inches high) retails at $1.50. Ask for Moody Kits at your local stores and send for our free descriptive booklet.

Moody MACHINE PRODUCTS CO., INC.
32 DUDLEY STREET, PROVIDENCE 5, R. I.

HOBBYISTS! SHOPMEN! Special ONLY $54.50

PALMGREN "HOBB-E" Rotary, Index, Milling Table
Ideal for Model Parts or Shop Work

Mill-Grind-Drill-Index-Route curved or straight-Rabbet and Mortise on drill press or lathe. 8" Table, 4" Cross Feed, 360° Rotation, Accurately Graduated. Bolts to table. Order NOW! SAVE $100. Only $54.50. Less Rotary Feed $43.75. Write for "HOBB-E" Tool Circular.

CHICAGO TOOL and ENGINEERING CO.
8349 South Chicago Ave. Chicago 17, Ill.

Our 542nd Advertisement

REAL DIESEL ENGINE

$2.95 • for planes, boats, midget cars • 7500 RPM; 1/7 HP; ht. 3½"; wt. 5 oz. • precision machined

You just can't beat this price for a precision diesel engine! Streamlined, compact, easy to install. Thousands of satisfied users all over the world. Fast delivery if you ORDER TODAY! Send $2.95 plus 25¢ postage.

Gotham Hobby Corp. Dept. M, 107 E. 126th St. New York 35, N.Y.

Catalog OF 3000 Novelties 10c

Send 10c for amazing catalog of novelties, live animals, scientific supplies, hobbies, funmakers, planes & boats, looms, magic tricks, joke articles, unusual seeds, gadget timesavers, cameras, optical goods, projectors, movies, lucky jewelry, religious novelties, disguises, musical instruments, stamps, coins, puzzles, fortune tellers, radios, auto & bike accessories, telescopes, magnifiers, compasses, banks, smokers' gadgets, artists' supplies, printing sets, engines, motors, shockers, knives, billfolds, fireworks, guns, rifles, sports, books, games, plants, etc. Send name, address & 10c to:

JOHNSON SMITH & CO., Dept. 503, Detroit 7, Michigan

DRAINS Cellars, Laundry Tubs; CIRCULATES Oil; IRRIGATES Gardens

Original "Type P" Pump has 2400 GPH capacity. 360 GPH 75' high, or 1500 GPH for 25' well. Use any ⅛ to ½ HP motor. DOES NOT CLOG. 1" intake; ¾" outlet.

Only $6.95 postpaid if cash with order.
MOTOR COUPLING INCLUDED
(West of Mississippi, add 50c.)

SATISFACTION GUARANTEED OR MONEY BACK!
Also Gear Pumps in all sizes.

$6.95

LABAWCO PUMPS, BELLE MEAD 30, N. J.

OVERHAUL YOUR MOTOR *in 10 minutes*

STOP BURNING OIL, STOP PISTON SLAP
15,000 Mile Performance Guarantee!

1st Step—CLEANSE WITH "MOTOR PURGE"—In the FIRST step of the famous Motor Renew Kit treatment, the "Purge" formula cleans, quiets and frees rings, valves and pistons from efficiency and power robbing carbon, gums and varnish. Pour this miracle solvent into the cylinders, run your motor and watch the combustion residue billow out of your exhaust pipe.

2nd Step—RENEW WITH "COMPRESSION SEAL"—RESTORE COMPRESSION . . . GET NEW POWER, SPEED AND ECONOMY with "Compression Seal"! As the SECOND step of the Renew treatment, squeeze this self expanding mineral compound into your cylinder where it can fill worn spots (which cause compression leaks) between cylinder walls and pistons. Thus it restores compression . . . cuts oil-gas waste and eliminates costly engine overhaul and ring jobs.

100% MONEY BACK GUARANTEE!
Free Auto Manual with each order. Kit treats all cars and trucks.
$6.95 Postpaid (or send $1 deposit, bal. C.O.D.)
CONSOLIDATED ENGINEERING, Dept. MIK-10,
10407 W. Washington Blvd., Culver City, Calif.

Steel Assortment for Homecraft Work Shops

the marvelous Sure Spec

tinker-pak

an assortment of finest quality carbon and alloy steels

The Tinker Pak

—12 pieces each approximately 12" long—$2.75 (weight 5 lbs.)

The Super Tinker Pak

—12 pieces each approximately 36" long—$4.95 (weight 15 lbs.)

Each Pak contains high quality bars from 3/16" to 1/2" diameter; flats from 1/8" x 3/16" to 1/4" x 1/2"; seamless tubing from 1/4" to 1 5/8" outside diameter.

see what you can repair!

- Door Stops
- Baby Carriages
- Small Motors
- Lawn Mowers
- Toys
- Appliances
- Automobiles
- Farm Machinery
- Garden Tools
- Sleds
- and dozens more!

look what you can make:

- Small Tools
- Cabinet Handles
- Towel Racks
- Furniture Braces
- Axles for Children's Vehicles
- Hinges
- Door Fasteners
- Fish Spears
- Gun Racks
- TV Aerials
- Outdoor Grills
- and many many more!

SATISFACTION IS GUARANTEED, so get a Tinker Pak from your hardware store today. If he does not stock, send your order and hardware dealers name to—

SOLAR STEEL CORPORATION

Enclose Check or money order. No C.O.D.'s. Shipping charges extra.

Tinker Pak, Dept. D, Union Commerce Bldg., Cleveland, Ohio

---

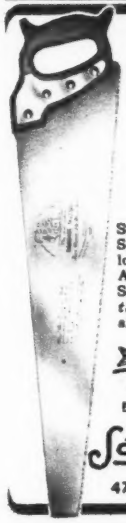
6 GREAT SHAW DU-ALL

Plow
Plant
Cultivate
Mow
Rake
Cut Trees
Saw Wood

Walking or Riding Tractors

1½, 3, 5 H.P. walking models. 5, 8, 12 H.P. riding tractors. Get just the power you need in Shaw extra strength superior traction machines. All wanted tools, attachments. Dependable for nearly 60 years. See a Shaw dealer. Write for FREE literature, low prices—today.

SHAW Mfg. Co. 2910 Front St., Galesburg, Ks. 668-ME N. 4th St., Columbus, O.



GENUINE SWEDISH STEEL HANDSAWS

the kind that stay sharp longer!

SANDVIK Handsaws of Swedish Charcoal Steel cut faster, cut smoother, and stay sharp longer than any other saw you ever owned! Amateur or professional, you'll appreciate SANDVIK's *extra high crown . . . full taper ground . . . better balance . . . man sized grip.* Man! This is a *real* saw!

"Fish & Hook" Brand of Quality

SEE IT—TRY IT AT HARDWARE DEALERS EVERYWHERE

Write for Sandvik Folder Dept. M

Sandvik Saw & Tool

47 WARREN ST., NEW YORK 7, N. Y.

Free Catalogs

LATHES
DRILL PRESSES
SHAPERS

SEND FOR CATALOGS DESCRIBING MACHINES IN WHICH YOU ARE INTERESTED:

- 14" Drill Presses
- 9" Lathes
- 10" Light Ten Lathes
- 10"—1" Collet Lathes
- 13" Lathes
- 14½" Lathes
- 16" Lathes
- Series 900 & 1000 Turret Lathes
- No. 2-H Turret Lathes
- 7" Bench Shaper
- Attachments for South Bend and other lathes

HELPFUL HANDBOOKS

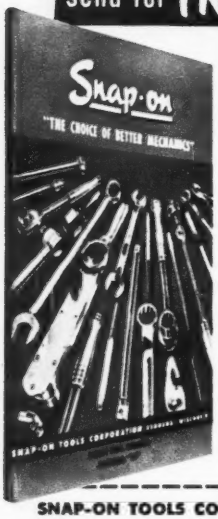
- How To Run a Drill Press - - 25c
- How To Run a Lathe - - - 25c
- How To Run a Shaper - - - 25c

SOUTH BEND LATHE

Building Better Tools Since 1906

SOUTH BEND 22, INDIANA

send for FREE CATALOG



America's Foremost

money-making

MECHANICS' TOOLS

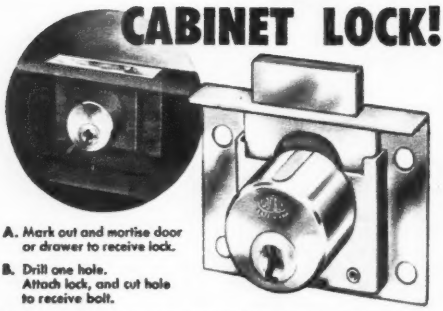
It's easy to own the same "pay-off" tools used and endorsed by America's top-earning mechanics throughout the automotive, aviation and industrial fields! Snap-on tools help you handle every repair job faster, easier, better. And they LAST . . . pay for themselves over and over again! Start building your own tool set now with basic Snap-on units—add others any time. Genuine Snap-on tools are never sold in stores—direct to users only. Mail coupon for free catalog.

Snap-on Tools

SNAP-ON TOOLS CORPORATION
8078-J 28th Ave., Kenosha, Wisconsin
Send me free catalog of Snap-on tools.

Name _____
Address _____
City _____ Zone _____ State _____

It's Easy to Install a CORBIN CABINET LOCK!



A. Mark out and mortise door or drawer to receive lock.

B. Drill one hole. Attach lock, and cut hole to receive bolt.

Better hardware stores everywhere have Corbin Cabinet Locks for *all* your cabinet work including:

DESKS, DRAWERS, CHESTS, WARDROBES, GUN CASES, CABINETS, TOOL BOXES

CORBIN®

Get the Corbin Cabinet Locks you need soon. They keep valuable papers secure . . . protect children from guns, tools, and harmful medicines.

CORBIN CABINET LOCK DIVISION
The American Hardware Corp., New Britain, Conn., U.S.A.

The New Man's Magazine

CAVALIER is a magazine for the man's man. If you get a kick out of living and know what the score is—then it's for you. If you like to know the facts, if you have a taste for life with no holds barred, true adventure, fast sports and lively women, this is what you've been waiting for. In the first issue there are 25 outstanding articles and stories to keep your eyes popping from first page to last.

YOUR AUTO INSURANCE COSTS TOO MUCH
KO FOR VD
WHAT IS A SPORTS CAR?
THE GREATEST GOLD STRIKE OF THEM ALL
I FLEW THROUGH A HURRICANE
BALLADS FOR MEN
HUNTING RUSSIANS IN TENNESSEE
IF YOU WERE PRESIDENT...
EDEN ROC: HOME OF THE BIKINI

At all newsstands now
Get it today! **25c**

A FAWCETT PUBLICATION

On The Trail Of The Rail

[*Continued from page* 183]

fail to come back for more, especially after they have tasted their first railbird.

On some of the inland marshes where the birds are found in numbers, dogs are used to flush them, especially where the mud is so slick and gummy as to make walking difficult. The shooter walks along the rim of the marsh and sends the dog 25 to 30 feet inside. In this way it usually is possible to get a reasonable bag. In areas where the birds are in a narrow strip of wild oats or wild rice along the river margin, two shooters team up. One will drift along the fringe of the marsh in a boat, smashing at the tangle with a long pole, while the other parallels his course on the bank. Needless to say, the shooter on the bank must refrain from low shots if he wants to avoid peppering his partner.

A friend of mine, one of the most enthusiastic rail shooters I ever met, had a plastic bottom installed in his railboat which lets it slide through the muddy, grassy shallows with extreme ease and greatly reduces the effort of the pusher. Regardless of the boat, however, the pusher has a tiring job and I can recommend this activity to anyone interested in taking off weight. If you do not lose from two to four pounds during one tide, you are not pushing hard nor fast enough.

The rail season usually opens during the first week in September in many states and runs for six weeks or two months. The shooting depends, to a large extent, on the local crop of rice or oats and on the weather. A flat may be almost barren of birds one day and literally alive with them the next. Last year I spent two days on one flat. The first day I flushed only five birds. The second day I had a limit in under a half-hour. A flight had arrived sometime during the 24-hour period.

The sora is a wading rather than a swimming bird although it can swim when pressed. When the rising tide floods the flats to a depth of three or four inches, the birds move about on the lower stems of the rice stalks. As this slows down their movement, they have only one recourse when a boat approaches, and that is to fly. Often they barely skim the tops of the grain beards and the shooter must cut a swath through this verdure with his shot load.

There is still time to inquire among local shooters as to possible railbird locations and a day on the flats will not only sharpen up your shooting eye in preparation for the upland season, but provide you with some interesting sport. Try it, and if you don't like it send me the railbirds, carefully packed in dry ice, and I'll refund you the cost of your shot shells. I can think of no game bird I'd rather eat. •

SAVE UP TO 85% ON WAR SURPLUS

AIRCRAFT NAVIGATIONAL DRAFTING MACHINE

Originally used by the Armed forces for faultless plotting of navigational courses. Now adaptable to other uses such as a drafting machine plotter, layout work, etc. Has 21" arms. 360° swing. Can be adapted to use with standard scales. Has double sealed ball bearings made of Beryllium copper. Bands are of K-Monel, non-corrosive. Easily installed on table or board. Ideal for use by the draftsman, engineer, navigator, artist, etc. Complete with Hardwood Case & spare parts.

39.95

7 PIECE DRAWING SET

A Real Pulley BARGAIN! Has a 4½" compass, with pen & pencil part, a 4½" divider, a 3½" reverse bow compass for pencil & ink, a 6½" ruling pen, capsule of extra leads. Complete in a velvet lined case. ONLY - 3.25

LENSATIC COMPASS

Here is a precision compass of unusual accuracy & dependability. Has a prismatic, hairline guide for sighting at distant objects and at same time reading degree of setting. Needle is jewel mounted. Has luminous dial for nite use & canvas carrying case. NEW - 3.95

RADIO HEADSET

HS-30U - Two magnetic type of receivers in a watertight brass case. Has soft rubber inserts in each receiver to fit into wearers' ear. Pliable steel headband. Ideal for communications, divers, workers in noisy compartments, etc. . . . NEW 3.95

ELECT. GYRO

50,000 RPM. Motor is integral part of balance wheel. Has double end shaft to drive precision tools or machinery at precise, controlled speeds. Ball bearing mounted. High or low voltage. Ideal for experimental work, labs, hobbyists, technicians, etc. 4.95

COMPLETE UNIT

MAKE YOUR OWN POWER UNIT

Here's a power unit PACKED WITH BRUTE FORCE! Does all those hard, heavy jobs that ordinary power tools cannot handle. Easily made from a vacuum cleaner type motor, a gear reduction drive and a few homemade parts. Can be used for turning large nuts & bolts, digging post holes, drilling large holes in wood or metal, driving power tools and machinery, lifting, pulling, pushing, or any job where a slow speed with high take-off power is required. YOU CAN'T STALL IT! Lightweight, easy to handle. Has 1000's of users in Home, Garage, Shop, Factory. We will supply complete instructions as compiled by Popular Science in the August issue.

MOTOR 3.25

GEAR BOX NEW 12.95 USED 6.75

90° TRANSMISSION

Has 1-1/2 to 1 Gear Reduction through bevel gears. Pre-fabricated bearings in dust-proof housing. A positive lever control clutch - 3/4" take-off shaft. Size: 7" x 6" 3.95

3 SPEED TRANSMISSION

Converts a high speed low power input into low speed, high power take-off. Has 2 take-off shafts at 4 to 1 & 16 to 1 ratios. The gear box has bronze worm drive gears and throw-out clutch. Will operate forward or reverse directions. Adaptable to many uses on power machinery . . . 19.95

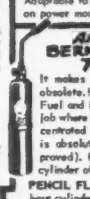
LEATHER BELT KITS

Made of bark tanned, top grain cowhide. Worn on your belt. Convenient & handy for carrying your small tools. Sturdy and durable. Re-inforced with rivets. For use by all mechanics, linemen, technicians, etc.

"A" - ELECTRICIANS KIT - 7 POCKETS. For tools, tape, pencil, etc. 3.49

"B" - RADIO & TV REPAIRMANS KIT Has 1 large and 2 small pockets 2.79

AMAZING BERNZ-O-MATIC TORCH



It makes the old "blow torch" obsolete. Here is a self-contained Fuel and Burner Unit that does a job where intense heat from a concentrated flame is necessary. It is absolutely SAFE! (ICC approved). Has a replaceable fuel cylinder of high quality steel:

PENCIL FLAME TYPE - With 10 hour cylinder and (1) Burner Unit 6.95

EXTRA FUEL CYLINDERS. 1.95

PRESSURE TANKS

G-1 - Stainless Steel. Shatterproof & rustless. Has reinforced ribs and is pressure tested to 400 PSI, with a high safety factor. Has 1/4" pipe ports in both ends. Ideal for use as a buoy, underwater fishing, diving, drinking water supply, cooking, painting or spraying. 12½" x 24". G-1 10.95

D-2 Tank - 500 cu. in. cap. . . . 3.95

230 PAGE CATALOG

1000's of ITEMS! Fully ILLUSTRATED! For the MECHANIC, SPORTSMAN, HOBBYIST, HOME OWNER, etc.

War Surplus — Factory Closeouts and General Merchandise Values! Save on Hardware, Hand & Power Tools, Gadgets, Sports Equipment, Hydraulics, etc. SEND 50c for HANDLING & MAILING.

PALLEY SUPPLY CO.
2263 E. VERNON AVE.
Dept. MI-10
LOS ANGELES 58, CALIF.

Order From This Ad. Pay by M.O. or check. P.O's. accepted. from D&B firms. Deposit with C.O.D's. All Prices FOB Los Angeles.

Brings
'split-second' starting
to ANY CAR or TRUCK

STEWART-WARNER *Electric*
fuel pump

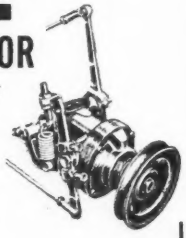
Get yours now! Get quick, sure "split second" starts for your car or truck—every time—in any weather! This Stewart-Warner *Electric* Fuel Pump feeds a steady flow of fuel to your carburetor the *second* you turn on the ignition. Operates independently of the engine. Saves your battery. Saves you from the trouble and embarrassment of a car that dies at every stop.

Easy to Install. Takes only minutes. Do it yourself or see your local Carburetor Shop or Service Garage.

Precision Built by
STEWART-WARNER
Instrument Division, Dept V-102
1840 Diversey Parkway • Chicago 14, Ill.

this **ONE** GOVERNOR

fits ___ popular farm & industrial gasoline engines



PIERCE LONG RANGE
Universal Governor

ONLY **$39.50**

Pulley extra:
4"—$1.70
5"—$1.75

Send Check or Money Order. State Make, Model of engine.

● Instant variable speed selection and accurate engine control at any speed setting within 1200 to 2600 RPM. Higher and lower ranges obtainable by simple change of pulley. Also "constant speed" operation.

● Accurate, dependable speed control for engines operating corn shellers, drag lines, hoists, arc welders, trucks and tractors with power take-offs, etc.

Write for Complete Information

DEALERSHIPS AVAILABLE

"World's Most Experienced Governor Manufacturer"

THE PIERCE GOVERNOR CO., Inc.
1600 Ohio Avenue, Box 1000
Anderson, Indiana, U. S. A.

Telescope Maker's Page

[*Continued from page* 154]

leg, I welded a 1½ in. coupling exactly between the other two outlets. Now we had the fitting we wanted.

From each of the three outlets on the crossed tee, we screwed a 12 in. pipe ending in a 90° elbow. Into each elbow, went a 1¼x16 in. pipe, extending down to the floor, with a 1¼ in. flange. This completed the tripod.

I then aligned the mirror, prism and eyepiece in the tube, and took the telescope to the roof. Then ever so carefully, I slid the 1x10 in. down into the cross-tee and got ready for my first look—a thrill I'll never forget.

—*Michael Pessah* •

☆ GIANT ☆
ASTRONOMICAL TELESCOPE

Ready for use. 6 ft. tripod. 100 diameters magnification. (10,000 area magnification.) Extra eyepiece especially suited to observing Milky Way, Nebulae, Comets, Double Stars and Star Clusters. Sun projector lens for watching sun spots. Full power and clear vision guaranteed. $15.00. 25% deposit on C.O.D. orders.

Shipped via Express F.O.B. Riverhead.

SUFFOLK SCIENCE SERVICE
DEPT. AT RIVERHEAD, N. Y.

EVERYTHING For The AMATEUR
TELESCOPE MAKER

Make your own telescope. Quality supplies guaranteed. Complete kit $4.50 up. Pyrex mirrors made to order. Aluminizing. Prisms—eyepieces—etc. Free catalog. Instructions—10c.

PRECISION OPTICAL SUPPLY CO.
1001 East 163rd St., New York 59, N. Y.

Make Your Own
TELESCOPE
Write today for free price list of CORRECT instructions and supplies
John M. Pierce, Highland Road, Springfield, Vermont
Where Amateur Telescope Making Started

COMPLETELY ASSEMBLED READY FOR IMMEDIATE USE

60 POWER TELESCOPE $3.95

VARIABLE EYEPIECE 20 x 40 x 60—BRASS BOUND

NEW! Three telescopes in one. 3 different magnifications. 20 power for ultra-bright images with 40 and 60 power for extra long range. Guaranteed. Most powerful to bring distant objects, people, sports events, ships, for anywhere near the money. 5 Sections. moon, stars, etc. Closes to 1 ft. long. Contains 4 60 times as ground and polished lenses. Also used close. as a powerful compound microscope. Directions included. Mass production enables us to offer this instrument at amazing price of $3.95. Nothing Else to Buy. We pay postage. Get yours at once.

CRITERION CO. 331 CHURCH ST.
DEPT. BML7 HARTFORD 3, CONN.

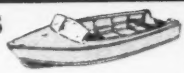
Build the Best! EASY TO ASSEMBLE BOAT KITS

NEW CATALOG
OVER 40 PAGES, INCLUDES ALL YOU NEED TO BUILD YOUR OWN
1 - BOAT KITS—30 MODELS
2 - MARINE HARDWARE
3 - MARINE ENGINES
4 - MARINE CONVERSIONS
5 - PAINTS & COLOR CHARTS

All For Only 35c, SEND COIN TODAY

ROWBOATS 8-10-12-14 FT. $39 up

OUTBOARDS 8 Models 12 to 18 FT.

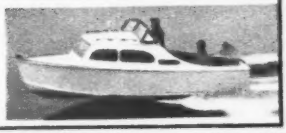


INBOARDS & CABIN CRUISERS 16 TO 23 FT.

NEW 18 FT. OUTBOARD CABIN CRUISER

FAST VEE BOTTOM HULL SPEEDS UP TO 25 M.P.H. — ROOMY CABIN, WITH TOILET, SLEEPS TWO —

U-MAK-IT PRODUCTS
703A-WHITTIER ST. Bronx 59, N. Y. City



New Jet Engine Burns Gasoline

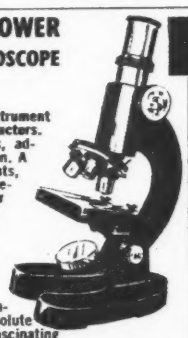
Powers Your Models
FASTER IT MOVES, THE MORE POWERFUL THE THRUST! New fun & thrills for model makers & experimenters. Ram Jet M.E.W. 601 rocket engine has no moving parts. Runs on regular gasoline. (Not a CO2 unit). Gives powerful, continuous thrust lasting 3 minutes. Maximum thrust lasts 1½ min. Easy to start & re-fuel. Lasts indefinitely. Aluminum tail pipe, brass fuel metering nozzle, steel compression tank. With booster tank. 5¾-in. long; 1½ oz. Complete, ready to run. Use alone or in pairs (2 for $3.43) Each Postpaid.... **$2.98**
JOHNSON SMITH CO., Dept. 539 Detroit 7, Michigan
Send 10c for Big Catalog of 3000 Novelties

KING MIDGET

WORLD'S LOWEST PRICED 2 PASSENGER AUTO

Drive it for 75c per week. Amazing performance. Surprising comfort. All steel construction. Ready to run or assemble it yourself with our bolt together parts. Rider agents wanted, earn your car Free. Send 25c for detailed literature or $1 (refunded first order) for actual assembly book and service manual filled with photos, drawings, specifications, etc.
MIDGET MOTORS MFG. CO. ATHENS, OHIO

100 200 300 POWER
Triple Turret MICROSCOPE
$14.95 Ppd.



Laboratory Model — The instrument that amazed biology instructors. Excellent optical qualities, adjustment, solid construction. A lifetime bargain for students, schools, labs, amateur researchers. **Anyone can now own one!** (Performance cannot be duplicated for $75.) Uses: animal, plant and mineral research. Study plant cells, microscopic animal life, crystal structure. See the complex anatomy of tiny insects, larvae, eggs. An absolute necessity in hundreds of fascinating fields. Shipped in hardwood cabinet.

NAVY TYPE MARK XX
20 POWER TELESCOPE
$9.95 Ppd.

$30 value. Fine optically ground achromatic lenses, fully coated. Same power as standard artillery observers spotting scope. Precision all metal construction. Rust and salt spray resistant. A valuable ship and boat owner's possession at a price everyone can afford. Excellent scope for rifle range or hunting. Shipped in choice of pigskin case or hardwood cabinet.

FREE CATALOG: WORLD'S GREATEST VALUES IN QUALITY OPTICS, MICROSCOPES, ACCESSORIES, PREPARED SLIDES, MAGNIFYING GLASSES, LOUPES, BINOCULARS, EVERY ITEM A BARGAIN! SENT ON REQUEST OR INCLUDED WITH YOUR ORDER.

MONEY-BACK 10-DAY GUARANTEE ON ALL ITEMS. SEND CHECK, CASH OR MONEY ORDER. 20% DEPOSIT REQUIRED ON ALL C.O.D.'S. CALIF. RESIDENTS ADD 3% STATE TAX.

40 TO 600 POWER

15 Combinations! Professional
MICROSCOPE $29.95 Ppd.
Model #635

At last! The FIRST instrument with this range of performance ever offered under $125. Every feature needed for advanced university, pre-med and medical school use. Triple revolving turret containing 10X, 20X and 40X achromatic objective lenses. Achromatic condenser, 6-aperture revolving iris. Two-side plano and concave substage mirrors. Solid base, excellent precision construction. Complete with fitted hardwood case. With 15X eyepiece (giving 150X, 300X & 600X) less mechanical stage.

SET OF EXTRA EYEPIECES
$9.95 Ppd.
For above model #635 microscope. 4X, 5X, 8X, 12X interchangeable eyepieces in hardwood case, giving a total in all of 15 different powers from 40X to 600X. Complete set of 4 in case.

MODEL #400 MECHANICAL STAGE $14.95 Ppd.
Shown on model #635 microscope. Made only for this instrument. This is an optional accessory which allows you to move the slide microscopically right, left, up or down without touching slide. This calibrated stage cannot be duplicated for less than $45. (If microscope is ordered without mechanical stage, we will fit your instrument with fine spring steel, clip-type slide holders.) Shipped in fitted hardwood case.

the AKRON 4400 SUNSET BLVD LOS ANGELES 27 CALIF OPTICAL DEPT 10-M

DIRECT *from the* IMPORTER!

"POWER-HOUSE" PRISMATIC BINOCULARS

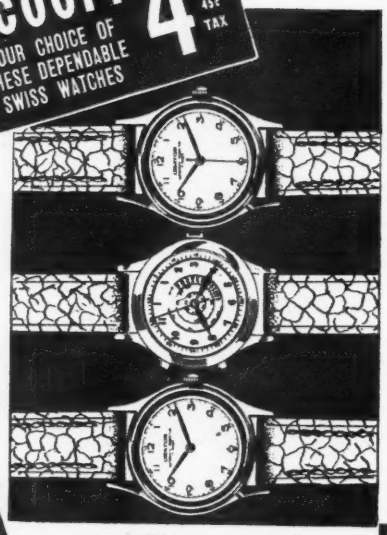
LOOK OVER THESE SENSATIONAL PRICES!

We stake our reputation on these ultra-powerful imported binoculars. All are **COATED.** All are **ACHROMATIC COLOR CORRECTED.** All are fully **PRISMATIC.** And, best of all, they are **FOCUS-BALANCED,** a Thoresen feature that assures you years of enjoyable viewing without undesirable aberrations! Compare prices . . . . compare **QUALITY!** All are equipped with fine leather case and double straps.

NOTE—ALL PRICES FULLY TAX PAID—NOTE

- **7x50mm** Individual Focus (No. 157)—Tax Paid 33.95
- **7x50mm** Center Focus (No. 153) Sharp! Tax Paid 39.85
- **8x30mm** Center Focus (No. 146) Power! Tax Paid 38.50
- **10x50mm** Indivi. Foc. (No. 155) Light! Tax Paid 59.95
- **10x50mm** Center Foc. (No. 155-C) Tax Paid 64.95
- **16x50mm—TERRIFIC POWER!** Our greatest value! Truly a lifetime investment in thoro enjoyment. **LOOK** at our low, low prices! Tax Paid too! No. 156 (Ind. Foc.)—**66.50.** No. 156-C (Center Foc.) only 71.50

SCOOP! YOUR CHOICE OF THESE DEPENDABLE SWISS WATCHES **4.44** PLUS 45c TAX



YES . . . THEY'RE GUARANTEED!

Every one of these watches bears the same **UNLIMITED GUARANTEE EXCLUSIVE OF PARTS** as our 17 jewel watches. They are really dependable and should give years of accurate timing. **NEVER BEFORE** offered at this sensationally **LOW** price! Get several . . . one for yourself, another for that active boy of yours. **ALL ONE LOW PRICE—4.44, plus 10% tax, total, only—$4.89**

JEWELED SHOCK RESISTANT WATCH

The **STAFF SHOCK ABSORBER** built right into this remarkable watch saves you time, worry, aggravation! Use at sports, work, or as an attractive all-around watch! Actually defies breakage! Luminous dial, sweep-second hand, unbreakable crystal, jeweled Swiss movement, leather band. (Add $1 if metal flexible band is desired). **Some value!** No. 260. Only 4.44, plus 45c tax, total **4.89**

"MECHANICAL BRAIN" SPORTS WATCH

Budget priced edition of our famous CHRONOGRAPH. Measures distance. Times sports. Times speed of autos, horses. Times photography and laboratory experiments. Times workshop operations. It's also a dependable wrist watch. Uses 2 PUSH-BUTTONS. Has: unbreakable crystal, night glo numbers & hands, sweep-second. If Metal Flexible band is desired, add $1. No. 236. Slashed price: 4.44, plus 10% tax, total **4.89**

DELUXE GILT DRESS WATCH

Last word in smart styling for men! Yellow gold color effect case. Deluxe dial. Unbreakable crystal. This watch makes a terrific impression—looks like a $50.00 timepiece. Yet it's accurate and should give you long, satisfactory service with a minimum of care. No. 209-X. Rockbottom price—4.44. Tax only 45c, making a total of **4.89**

Free!

AUTOMATIC PENCIL-LIGHTER

You've seen this famous style of **PENCIL-LIGHTER** in jewelry stores everywhere selling from **$4.95 to $15.** Given **FREE TO YOU** for trying any Thoresen item on this page! You'll be proud and delighted to own this magnificent Pencil-Lighter! Propel-repel pencil gives you weighted balance writing. Simply press clip for a sure-fire light! Satiny silver color. Protective device prevents accidental lighting in pocket. Tight spring clip prevents loss. Uses standard thin leads, lighter fluids and flints. Given you merely for **TRYING** our merchandise! If not delighted with purchase, return merchandise, but **KEEP** and enjoy the Pencil-Lighter as our lifetime gift! **RUSH COUPON NOW!**

Mail now for FREE PENCIL-LIGHTER & HOME TRIAL!

THORESEN DIRECT SALES
131 West 33rd St., Dept. 10-L, New York 1, N. Y.

RUSH the following on **7 Day Trial** with **Guarantee Certificate.** Include the **PENCIL-LIGHTER** at no extra cost. If not delighted, you are to return the price paid but the **PENCIL-LIGHTER** is mine to **KEEP** in any case!

☐ Remittance enclosed—send prepaid. ☐ Send C.O.D., plus post.

Item No.	Name of Article	Price

NAME _____

ADDRESS _____

TOWN _____ STATE _____

PRINTED IN U.S.A.

RL

ARS

TEED!

ED GUAR-
atches. They
rate timing.
price! Get
oy of yours.
only—$4.89

WATCH

his remark-
e at sports,
ually deflect
able crystal.
etal flexible
plus
... 4.89

WATCH

H. Measures
Times pho-
operations.
BUTTONS.
nds, sweep-
No.
... 4.89

CH

color effect
ch makes a
Yet it's ac-
rice with a
.44.
... 4.89

ME TRIAL!

Certificate.
ot delighted,
LIGHTER is

.., plus post.

Price

PRINTED IN U.S.A.

M

I
w
ti
s
i
a
e
n
t
y
P

v
e
t
i

MR. TV OWNER!

Stop TV Interference At Once And Stop It—For Good!

An amazing no-risk challenge to every set owner who is tired of paying $5-$10-$15 for THE SAME TV REPAIRS . . . OVER AND OVER AGAIN!

Do you know that 95% of the wavy lines, streaks, zags, distortions, picture roll, flutters, and snow that ruins your TV viewing are not caused by your set at all? That they cannot be eliminated by your repairman, no matter how good he is! That they cannot be prevented by your antenna, no matter how powerful it is!

Yes, 95% of your costly television troubles are caused by electronic TV interference from the outside. And the only way to permanently remove that interference is to BLOCK IT OUT, before it even reaches your set—in exactly the same way sunlight glare is blocked out by sun glasses, before it reaches your eyes.

This is exactly what a revolutionary new TV invention—the TELERON TV WAVE TRAP (Pat. Pend.)—does for your set. This amazing "Interference Eliminator" actually eliminates the 6 most aggravating forms of interference, before they can reach your set. It actually strengthens your reception on all channels—even in poor reception areas.

WHICH OF THESE 6 TV HEADACHES DO YOU WANT TO REMOVE FOR GOOD?

WAVY LINES — Caused by airplane flying as much as 15 miles away from your home. MR. OSCAR HOLDEN of *New York City* writes: "My TELERON WAVE TRAP eliminates 95% of all wavy lines within 15 minutes after I clipped it on my set."

DISTORTION—Caused by outside telephone lines up to 11 miles away from your home . . . or by other neighborhood TV sets and antennas that compete with your set for the same channel.

TELERON WAVE TRAP eliminates 93% of all this interference BEFORE IT REACHES YOUR SET.

SNOW — Caused by constantly - running electrical appliances in your home — such as refrigerators and oil burners.

MR. M. CAINE of *Chicago, Ill.* reports: "I live in a big apartment house where there's plenty of electrical interference. But since I clipped a TELERON WAVE TRAP on my set I haven't been bothered once by snow."

BORER EFFECT — Caused by doctor's diathermy machine—or amateur radio operator as much as 3 miles away from your home.

MR. WILLIAM BENTLEY of *Los Angeles* writes: "My family couldn't go through a night of TV viewing without getting terrific TV interference from a hospital about 2 miles away. Then I heard about the TELERON WAVE TRAP. I tried it, And now, 6 months later I have only been bothered once by those diathermy machines in that hospital."

STREAKS — Caused by car ignitions, trucks or busses up to 2½ miles away from your home . . . or by neon signs, doorbells, electric toasters, broilers, radios and phonographs within 1 mile of your home.

TELERON WAVE TRAP eliminates 98% of all this interference BEFORE IT REACHES YOUR SET.

TV STATIC—Caused by atmospheric conditions up to 5 full miles away from your home.

TELERON WAVE TRAP eliminates 95% of all this irritating interference BEFORE IT REACHES YOUR SET.

MOVIE-CLEAR RECEPTION 365 DAYS A YEAR!

Send for your TELERON WAVE TRAP today. Send no money. When your TELERON WAVE TRAP arrives simply clip it on the back of your set. It takes only 30 seconds — you need no special tools, no training. And it fits every set made since 1947—no matter what the brand, style or year. See for yourself how this amazing invention gives you sharp, clear pictures. How it adds new life to your picture even in fringe areas—even in weak reception zones—even on channels you could hardly pick up before.

HERE'S PROOF—TEST IT IN YOUR OWN HOME! AT OUR RISK!

If you order your TELERON TV WAVE TRAP today, you do not pay the $5 that 50,000 other TV owners paid—you deposit only $2.98 with the postman. If after you clip this amazing TELERON WAVE TRAP on your set, you are not getting perfect movie-clear reception—please return for full money back! *You try it at our risk—you do not buy it until you are 100% satisfied. ORDER TODAY AND SAVE $2!*

ORDER TODAY AND SAVE $2! MAIL COUPON NOW!

TELERON TV WAVE TRAP, Dept. 78, 699 Madison Ave., N. Y.

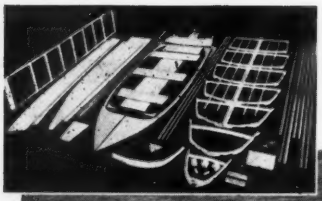
Please send me the TV WAVE TRAP immediately, at $2.98, plus C.O.D. postage. I understand that satisfaction is guaranteed 100%.

Name.....
(Please Print)

Address.....

City..... Zone..... State.....

☐ Cash ☐ Check ☐ Money Order. SAVE MORE! Send $3.00 with coupon. We pay all postage charges. Same Money-Back Guarantee.



SAVE ½ or more! Buy a new

CHRIS-CRAFT KIT

Stunning, new Chris-Craft 17-ft. Kit Speedboat—only **$449***

EASY to assemble! Fun, too! A wood parts are precut. Kits in clude all necessary fastenings an illustrated assembly instruction Materials are top-quality. Man models! Mail coupon today fo FREE catalog! Buy NOW!

8-ft. Pram Kit Boat—**$45**. Sail Kit, **$68**

10-ft. Utility Racing Pram Kit Boat—**$84**

New Chris-Craft Kit Gun Cabinet—**$66**
(Upper Display Cabinet—**$34**)
(Lower Storage Cabinet—**$32**)

14-ft. Kit Duckboat—**$89**

14-ft. Sportsman Kit Boat—**$139**

New Chris-Craft Kit Treasure Chest—**$39**

14-ft. De Luxe Runabout Kit Boat—**$176**

16-ft. De Luxe Runabout Kit Boat—**$239**

18-ft. Express Cruiser Kit Boat—**$595**†

31-ft. Express Cruiser Kit Boat—**$2070**

Chris-Craft Boat Trailer—**$125** (tax extra)
Also Stake Body Kit—**$36** (tax extra)

(Prices quoted are for kits, f.o.b. factory, subject to change without notice.)

CHRIS-CRAFT CORPORATION
Algonac, Mich.

FREE!

Send FREE 16-page Chris-Craft Kit Catalog to:

Name_____

Address_____

City_____ Zone_____

County_____ State_____

*Also available assembled and painted, **$749**
†Also available assembled and painted, **$895**

Distributor and dealer inquiries invited

Chris-Craft
BOAT KIT DIVISION
CHRIS-CRAFT CORPORATION, ALGONAC, MICH.

MOTOR BOATS *OUTBOARD MOTORS*
MARINE ENGINES *BOAT KITS*

WORLD'S LARGEST BUILDERS OF KIT BOATS

KIT

n, too! A
Kits i
nings an
struction
ty. Man
today fo
OW!

inet—$66
-$34)
-$32)

Chest—$39

5 (tax extra)
tax extra)

$749
$895
nvited

C, MICH.
RD MOTORS
S
IT BOATS